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SUMMARY

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THE EXPLORATION, THE LOYALTY AND THE REGAINING OF THE CLIENT - FOUNDATIONS OF THE PERCEPTION AND REACTION MARKETING

Abstract: *The globalization of the digital technology and of the Internet is the main factors which in the last decades have created a free and commercial market economy. This market has given birth to a new type of client whose needs, desires and approaches are completely different. These clients have become more pretentious with regard to the way in which the companies interact with them and haw they are treated. The current marketing must recognize and communicate with this new type of client in order to achieve success in this client economy dominated age. This paper will present the importance of the three factors (exploration, loyalty and regaining the client) in order to give the possibility to the organization to better react to the constant changes on the market. Based on the interaction with the client and the chosen contact method, the perception and the reaction marketing is the only way for the company.*

Keywords: *perception and reaction marketing, exploration, loyalty, regaining the client, "cold" prospector, "lead" prospector*

1. Introduction

The perception and the reaction based marketing can identify the relevant sales opportunities if the company's expectations are not balanced by the expectations of the client. This implies the existence of a marketing model which Peter Druker presents as not just a "specialized activity" but to represent the "entire" business as seen from the point of view of the client.

The main task of the perception and reaction marketing is to transform the ever changing needs of the clients in profitable opportunities (Kotler, 2004). Consequently the companies have to see the client as an financial asset that must be maximized and managed as any other asset (Kotler, 2004). The recognition of the value of this asset forces the companies to redesign their exploration, loyalty and the regaining the client approaches. The success of these approaches is conditioned by the way in which the companies will succeed to organize them selves around the client (Gamble et. al, 2008). In the same time, the success of the three approaches is influenced by the way in which a company succeeds to understand the clients.

Concretely the understanding of the clients combines several elements:

- traditional marketing data – who are the clients; what are the clients doing,; were are the clients; what are they buying; what would they like to buy; at which media channel are they exposed; what media channels do they choose to watch, to listen or to read;
- psychological aspects – what are the client thinking and feeling; what are their objectives an strategies; how is their behavior influenced; the feelings of the clients with regard to the experience; the way in which the promises made to the clients have been met; are the clients unsatisfied.

The conclusion is clear: the understanding of the client is the main element in the mechanism which indicates to the company if it responds to the needs of the clients (Gamble et. al, 2008).

2. Exploration of the clients

The attraction of new clients constitutes an economical imperative for any company, being an integrated part of all commercial activity. At the beginning of a commercial relationship, every client is first of all a prospector. The act of acquisition transforms the prospector in a client. At the company's level, the exploration of the clients is based on two logics: defensive logic and offensive logic (Claeyssen et al, 2009).

The defensive logic – is specific to the existence of some restrictions which affects the company's activity. The reasons of these restrictions are: the stagnation of the market, strong competition, low number of prospectors,

low developed commercial means. In this context, the exploration ensures the replacement of lost clients, the protection of the commercial capital or it stabilizes an activity.

The offensive logic – characterizes the situations in which the company strongly invests with the purpose of developing a new business, it targets the development of new markets or it follows the launching of new products or services. Taking all this into consideration, the exploration ensures the fast grow of the company (for example the evolution of Vodafone and Orange on the Romanian mobile phone market).

Without a doubt the two logics must be found in the company's strategy. The client exploration demarche is an extremely complex one. A research of the market will allow the detection of the potential interested groups for the sold product or service. As long as the potential clients are not exactly identified, they can be considered "suspects". The exact identification will allow each identified "suspect" to become a "cold prospector". From the moment a commercial contact is established this will allow the validation of the interest and will present the buying possibilities of the client. Thou fore the "cold prospector" will become a "lead prospector" (figure.1).

The client exploration as it results from figure 1 is a stage in the clients life cycle, and the three stages (suspect, cold prospector, lead prospector) represents the prospectors life cycle stages. From the moment in which the acquisition takes place, the lead prospector becomes the occasional client that should become a loyal one. Obviously the life client's life cycle analysis must be made in accordance with two main indicators: profitability and time. This analysis allows the company to answer the following three questions: 1) how profitable is each exploration stage? 2) how long must we prospect the market? 3) how will the marketing budget be shared between the exploration and the loyalty operations? The answers to these questions are influenced by the way in which the company estimates in the best possible ways the investments for exploration. These investments are determined by the necessary commercial pressure for the transformation of a prospector into a client, by the relation between the number of clients which leave the company and the total number of clients, and by the pressure of the competition.

The research made in this field have pointed out several extremely interesting aspects: 1) no less then 70% of the marketing budget is spent on the discovery of new clients, although 90% of the companies incomes are

provided by transactions of current clients; 2) by the excess of the concentration on the new client recruitment and the neglecting of the current clients which is maintained at around 10-30% (Kotler, 2004).

Without a doubt, the client exploration represents a determining strategic axis for the company's performance. The information technology and the Internet offers new tools for the exploration of the clients (the phone, the e-mail, the web site etc) , which together with the classical ones, will offer the company a large number of possibilities in order to attract new clients.

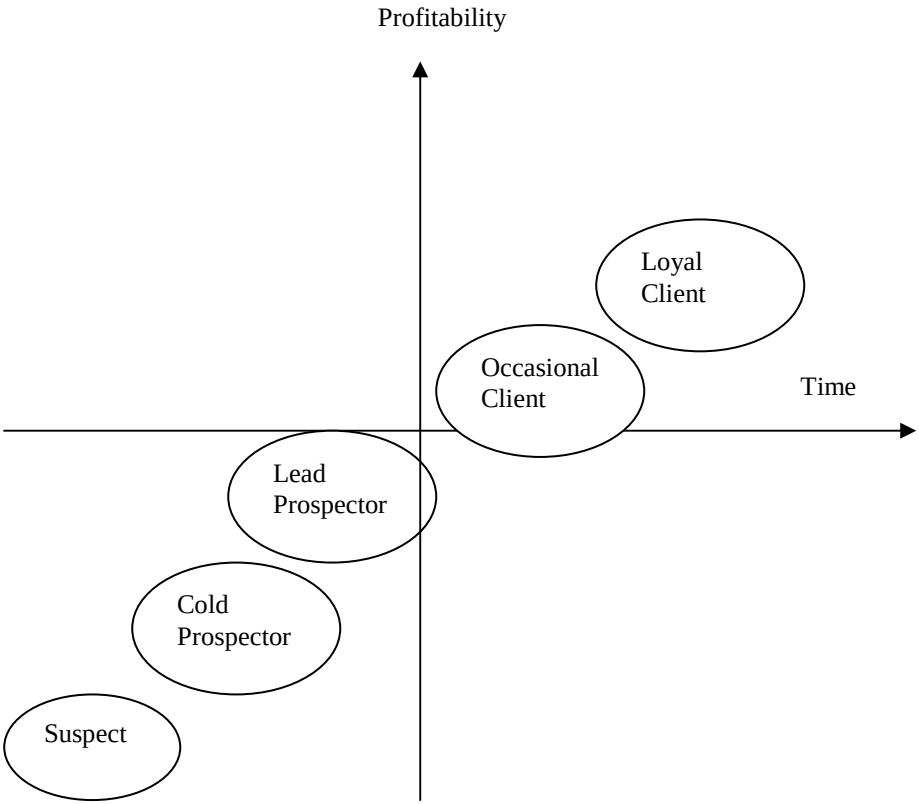

Figure 1 – The client life cycle

In the clients' exploration demarche, the company must avoid the following errors: to much exploration, the depletion of a field, the lack of a clear target, the choice of the wrong sales channels, the company thinks about sales and not about profit (Claeyssen et al, 2009).

The exploration of the clients assumes the identification of one or more client attraction strategies, the establishment of clear and precise objectives, the quantitative and qualitative evaluation of the clients. As a main exploration method a company can choose for attracting private clients (B2C) or corporate clients (B2B) or even choosing an international exploration.

3. The clients' loyalty

The researches in this field have shown in a clear manner that keeping a client is much more profitable as recruiting a new one. The '80 have consecrated the passage from the transactional marketing to the relationship marketing, whose main purpose is the transformation of the clients into loyal ones. The loyalty of the client is defined as a strategy that identifies, maintains and increases the efficiency of the best clients using an added value relationship and an interactive long term relationship. This brings forth two main directions: 1) the economical added value (transactional value) and 2) an affective added value (the relationship value). A company, no matter of its activity field, will have to target both directions al the loyalty added value.

The long term loyalty of the clients can not be based solely on the quality of the offered services or products. Even thou the company do everything that is needed to satisfy the clients, it will still have to bring something different. Taking all this into consideration we have to point out the Chris Daffy's opinion, which considers that there are seven different types of loyalty (Daffy, 2009):

Bonus loyalty – is created when the company gives the client bonuses or rewards the clients in order to keep them loyal. The means that are used in this case are: fidelity cards for retail food markets, auto producer credit cards; credit points; credit point accumulated when we buy fuel etc. Without a doubt, these loyalty packages work because we can find them in different companies that work on the Romanian market (Ramada Hotel, Eximtur Turism Agency, Mol gas stations, Tarom etc). The question that rises from

this type of loyalty is "what is the client loyal to?" We share Daffy's opinion which considers that this loyalty dose not create a direct relation with the company but more exactly we see a loyalty with regard to the program/special offer.

Inertia loyalty – comes in when there is an obstacle or one is created, and this will make it harder for the client to change the supplier. One of the most relevant examples is, in this case, the one of commercial banks. In Romania the inertia loyalty was created by the attitudes and by the practices of the commercial banks, which have made it harder for the clients to change a bank for another. Consequently, the problems faced by the clients as they try to change a bank with an other are one of the reasons for which most of the clients have not change their initial bank. Another example for the Romanian mobile phone market is when a client wants to change the provider from Vodafone to Orange or vice versa.

Habit loyalty –comes in when some clients stay loyal to a product or a service because they do not work hard enough to find an alternative. For example, in the city of Sibiu, Romania, most clients have chosen to make their daily shopping from the "Alcomsib" neighborhood shops. This has happened until new alternatives have emerged (Real, Kaufland, Bila etc.).

Monopoly loyalty – appears when the client has no other choice except the monopoly-supplier. In Romania we can point out several situations when we can discuss about monopoly loyalty: RomGaz, TransGaz or SNCFR. In all these cases the clients have no alternative but to buy from the monopoly-suppliers.

Price loyalty – comes forth when on the market there are client that are loyal to the supplier that has the lowest price. As long as this supplier will maintain low prices, the clients will be loyal. A good example in this case is the "Pennymarket" network which offer food products at the lowest prices. This will change when on the market will appear a new competitor that offers lower prices.

Fashion loyalty – is determined by the fact that there are many consumers that are loyal to the last trends. If a company succeeds to make its product/service a "cool" one, then it will succeed to create loyal clients. But the clients will change the supplier when something "cooler" comes along.

True loyalty – is when the client remains loyal to the company, to the products/services even when there are numerous competitors on the market. Such a loyalty is formed from three components: affinity, satisfaction and involvement (Hofneyr, 1998).

The Satisfaction is the starting point in the creation of the true loyalty. In this sense, more and more companies approach much more careful the needs of the clients, with the purpose of substantiation of a partner relationship with them (Fahlbush, 1998). The consequences of satisfaction/in satisfaction of the client are many. If the consumer is motivated by the product/service he becomes the company's client. Form a conceptual point of view, the satisfaction is considered an evaluation process of the "expectation-performance" relationship or an answer after the evaluation. From an operational point of view, the satisfaction brings forth the manifested behavior, being an answer of an emotional nature of variable intensity which is expressed in a well determined timeframe and with a limited duration (Dumitrescu and Apostu, 2009). Finally a research of the client satisfaction will have to take into account the following three characteristics: subjectivity, relativity and time evolution.

The Involvement represents the degree in which the client has already invested at a financial and emotional level in his or her relationship with the company (Daffy, 2009). The Client's involvement assumes that he will be treated as an important part of the business.

The Affinity represents the emotional feeling which the clients have for the product, for the brand, for the potential alternatives to the relationship with the client. The affinity is based on feelings. If a company whishes to create for their clients emotions and feelings linked to its products/services, then all the employees of the company must show that they are animated, at their turn by emotions and feelings.

Creating satisfaction, involvement and affinity for the company, for a product or service, the firm must create favorable premises in order to obtain a long term relationship with the clients and there fore it creates loyalty.

3. Regaining the lost client

Regaining the client represents the last demarche for sustaining the operationalization of the perception and reaction marketing. The importance of this aspect resides in the fact that despite creating a real loyalty, the company will never succeed in retaining 100% of the clients. The demarche of regaining the lost clients is formed of three important stages (Claeyssen et al., 2009): 1) regrouping the client that have abandoned the company, in

different target group; 2) selecting the primary clients that must be regained and 3) sending certain adjusted proposals to the designated clients in order to gain their trust.

According to Philip Kotler, the loosing of some clients creates much more damage then the loss of the money that would involve in a transaction. The studies of TARP (Technical Assistance Research Program) shows that a dissatisfied consumer talks about his disappointment to a number of 11 people, each of the participants retells their story to the others. Consequently the company not only looses the money of the first dissatisfied consumer but also from many prospectors that have decided to buy from them (Kotler, 2003).

Still, what lost clients constitute the company's priority in the demarche of regaining the lost clients? The opinions are various. We share the opinions of Philip Kotler and Yan Claessen, which considers that the lost client regaining effort must be directed towards the clients that have left the company because of a problem with the company, as well as with the clients that have been seduced by the competition after a more impressive offer. Even in case of the two presented segments, the clients are classified according to the degree of profitability, using different methods like the ABC method (Activity Based Costing), the Pareto principle (the 80-20 rule) or the 20-80-30 rule.

4. Conclusions

The perception and reaction marketing ultimately represents the art of finding and keeping the clients. From this point of view this marketing model's objective is to help the company to identify the moment in which the clients are interested in a product or a service and act accordingly. The perception and reaction marketing approaches the clients in all the stages of the client's life cycle as well as during the client regaining process. In this paper we have tried to present the importance of the three aspects – exploration, loyalty and regaining the client – for the company and for the client. The advantage offered by the perception and reaction marketing is that it allows the management of the client's road in an integrated way (exploration, loyalty and regaining the client), an element that can be a competitive advantage for every company.

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CONSIDERATIONS REGARDING EMPHASIZING IN THE ACCOUNTING SYSTEM OF THE BUILDINGS AND LANDS IN ACCORDANCE WITH THE ROMANIAN ACCOUNTING RULES AND WITH THE INTERNATIONAL ACCOUNTING STANDARDS

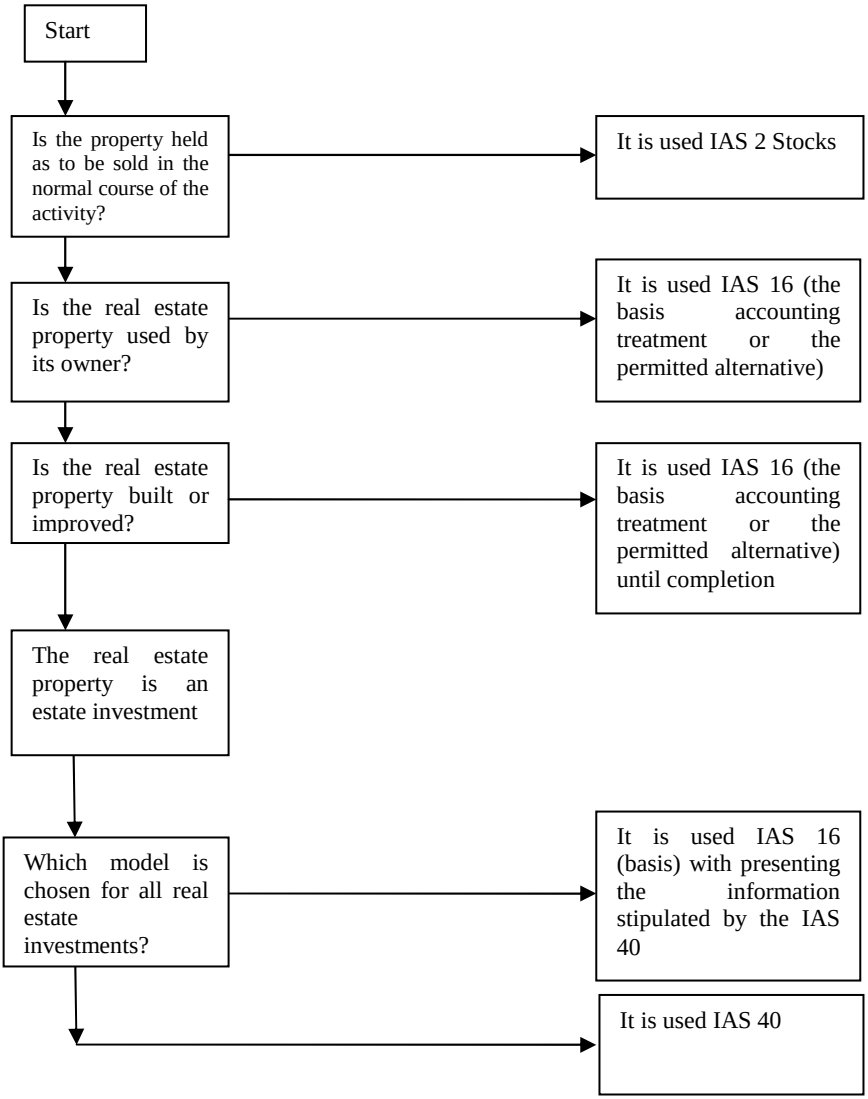
Abstract: *Aligning the Romanian accounting system to the international accounting standards and also to the European directives has manifested in terms of tangible assets. In this article we turn our attention towards the regulations regarding emphasizing in the accounting system the land and buildings as well as how to account them in the case that their destination is going to be changes according to OMPF 3055/2009 and OMPF 2869/2010 and in comparison with the international accounting standards.*

The Romanian Accounting Regulations define in the OMFP 3055/2009 as being active the following tangible assets that: are held by an entity in order to be used in the goods or services production, for rental to others or for administrative purposes, and are used for over more than one year.

This category includes: land and buildings, plant and machinery, other facilities, equipments and furniture, advances granted to the suppliers of tangible assets in progress.

Lands and buildings are separable assets and therefore are accounted for separately, even when purchased together.

Fixed assets are assets that generate profits and are held for more than a year for the purposes of developing the entity's activities. Rights over the real estate properties and other similar rights, as defined by the national law, must be presented to "Lands and buildings".



Movements in various items of property are presented in the explanatory notes. To this purpose, each property item is presented separately, starting with the acquisition cost or production cost, on the one hand, the increases, disposals and transfers during the financial exercise and, on the other hand, the cumulative value adjustments at the beginning of the financial exercise and at the balance sheet date and also the corrections made during the financial exercise on the value adjustments from the previous financial exercises. The value adjustments are presented on the balance sheet as clear deductions from the relevant elements.

In "The International Accounting Standards", assets represented by lands and buildings are treated and presented in financial statements of the entities in accordance with **IAS 16 Property, IAS 36 Impairment of assets**, **IAS 2 Stocks and IAS 40 Investment property,** according to their ownership / use in the property. Schematically choosing one of the standards listed above for their treatment can be represented as in figure above.

Therefore, depending on the purpose of holding / using the lands and constructions, they are treated:

• as stocks if the entity is going to sell them over the ordinary course of business,

• as assets if the entity uses them to produce goods, to offer services or in administrative purposes;

• as real estates if they are owned as to be leased or to benefit from their increasing value.

Romanian accounting regulations in force stipulate only the first two types of accounting and disclosure of information relating to lands and buildings that are either stocks or tangible assets. In the stock's category there are also included inventories and assets with long manufacturing cycle, that are for sale (e.g. assemblies or housing complexes, etc.. made by entities that have as main activity obtaining and selling houses). If the constructions are made so that a long-term exploitation is obtained from them, they represent assets. Also, when a land is purchased for the construction of sale buildings, this is recorded at stocks. Lands and buildings held for rental or to benefit from increasing their value are not treated separately from the assets used in the production of goods and services or in administrative purposes.

Therefore, a Romanian financial reporting problem could be this group of assets held by an entity to be used in the production of goods or services or for administrative purposes to those held for rental to others or to increase their value.

Possible improvements to presenting this information could be highlighted at least through an explanation in the notes to the annual financial statements, of these tiebreakers (given that many entities carry out both production and service offering activities but also rental spaces) with their connecting to the revenues in the reporting period. Another possible improvement method can be represented by introducing some special accounts that would reflect the investment properties held by an entity.

Carrying out a task in the current changing economic conditions force the entities to face some decisions relating to the modification of the assets destination (buildings and lands) and obliges them to make transfers from assets to stocks or vice versa.

When there is a change in the use of the asset, meaning that a physical restraint that was used by the owner is going to be improved in terms of the sale, when the decision of modifying the destination is made, the transfer of the asset from the tangible assets category to the stocks category is recorded in the accounting system. **The transfer is recorded at the depreciated value of the asset.** If the tangible assets were revalued, simultaneously with the asset's reclassification, the reserves account from its revaluation is going to be closed.

When an asset that was initially acknowledged in the land category is later used for building homes for sale, depending on the method of negotiating the goods sale contracts that are subjected to construction and sale, the land's value is included in the value of the asset constructed or it is shown distinctly at stocks in nature of goods, at the value that is recorded in the accounting system.

If the land has been revalued, simultaneously with changing the nature of the asset, the reserves account from its revaluation it's closed.

In the case of housing assemblies or complexes assets which were originally intended for sale and then changed their destination to be used by the entity for a long period of time or to be leased to others, in the accounting system a shift from stocks to fixed assets is recorded. The transfer is made at the time of the destination change, and at the

value at which the assets were recorded in the accounting system (represented by the cost).

Below we are going to present the accounting procedures for registering these transfers.

Consider a company engaged in owning a real estate construction activity that falls in the fixed assets category (held for long term use) and constructions falling in stocks (held for sale).

It owns at 31.12.N among other structures, three buildings as follows:

1. The A building held for rental use (so registered in the accounting system in the account 212_A) about which we know the following: the recording value 420.000 m.u., the recorded amortization 23.450 m.u. and reserves from a previous review 10 000 m.u.

At 01.01.N the society decides to modernize the building A in order to sell it, for this to happen, under the provisions of the OMPF 3055/2009 the building must be transferred from fixed assets to stocks. During January-February N +1 monthly expenses of 50.000 m.u. are made for modernization.

a) the transfer of the building A from fixed assets to stocks in 01.01.N at 01.01.N+1

%	=	212_A	420.000	
331		Constructions		
Products under execution			396.550	
2812				
Depreciation of buildings			23.450	

b) transferring the reserve from revaluation to the reserve from 01.01.N+1

105 Reserves from revaluation	=	1065 Reserves repre-senting the excess obtained from reserves from revaluation	10.000

c) recording during January N+1 of the modernization expenses in value of 50.000 m.u.

6xx	=	%	50.000
		3xx	
		4xx	

d) recording at the end of January N+1 of the current developing products value

331 Current developing products	=	711 Incomes for products stocks costs	50.000

e) recording during February N+1 of the modernization expenses in value of 50.000 m.u.

6xx	=	%	50.000
		3xx	
		4xx	

f) recording at the end of February N+1 the current developing products value

331 Current developing products	=	711 Incomes for products stocks costs	50.000

g) resumption of the work in progress

711 Incomes for products stocks costs	=	331 Current developing products	100.000

h) reception at 01.03. N+1

345 Finished products	=	% 711 Incomes for products stocks costs 331 Current developing products	496.550 100.000 396.550

i) in 15.03.N+1 the society sells the building at a sale price of 515.000 m.u.

4111 Clients	=	701 Incomes from selling the finished products	515.000

j) Downloading the accounting for the sold building

711 Incomes for products stocks costs	=	345 Finished products	496.550

2. building B owned for sale (therefore registered in the accounting system in the account 371_B) which has an acquisition cost of 120.000 m.u.

At 01.01.N+1, the society decides to withdraw from sale the building B and to use it for administrative purposes with an economical period use of 50 years, reason for which under the regulations of the

OMPF 3055/2009, they must transfer the building from stocks to fixed assets.

212_B Constructions	=	371_B Goods	120.000

Starting with February N+1, the monthly amortization will be recorded for this building.

3. building C held for rental (so registered in the accounting system in the account 212_C) about which we know the following: the recording value 360.000 m.u., the depreciation recorded 7.200 m.u. At 01.01.N+1 the company decides to sell the building C at a price of sale of 365 000 m.u. without making improvements, so that under the provisions of OMPF 3055/2009 and OMPF 2869/2010 they don't have to transfer the building from fixed assets to stocks.

a) Selling the building C

461 Sundry debtors	=	7583 Incomes from selling the assets and other capital operations	365.000

b) removing the building C from the records

%	=	212_C	360.000
2812 Depreciation of buildings			7.200
6583 Expenses regarding the			352.800

transferred
assets and
other capital
operations

Provisions in the OMPF 2869/2010 underlying these accounting records are the following: "If an entity decides to dispose a tangible without it being modernized, it continues to be treated as fixed asset, until it is taken out of evidence, and not as a stock element."

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THE SUCCESS OF E-COMMERCE ON LONG TERM

Abstract: *Next to the types of electronic sales but with a rhythm supported by development, we can identify the new way of trade, the information highways of the Internet. There are many possible options of electronic trade and the number of the options trading is expected to increase due to new types of cases. After the presentation of several accepted definitions of E-commerce it offers some figures on the level of development of this trade, figures with a remarkable dynamic, which supports once more the importance and topicality of the subject. E-commerce it offers the opportunity to sell products worldwide increasing number of potential clients.*

Keywords*: e-commerce, information and communication technology, internet, information society, business to business*

JEL classification: *(L81, L96)*

The E-commerce represents the deployment of a business through the Internet network, selling of goods and services offline and online. Another definition, a traditional one is being given by Robin Mansell:

The E-commerce means using within the networks with value added some software applications of electronic transfer of documents, fax communication, bar codes, files transfer, electronic mail. The development of interconnectivity of computers on the Internet entailed a more obvious trend of companies to use these networks within the area of a new commerce type, the Internet electronic commerce; these should appeal to new services.

One have in view the possibility to purchase through the network by consulting electronic catalogues “on” the web or “off”

catalogues on CD-ROM and by paying through credit cards or electronic wallets.

For others the E-commerce entails the transfer of documents – from contracts or pro forma orders to images or vocal registrations.

Another definition largely accepted concerning the E-commerce and its components is as follows: E-commerce represents that manner to lead commerce activities that use electronic equipments to enlarge the area of coverage (the place where potential clients are to be found) and the speed the information is being delivered with.

The E-commerce represents business relationships that deploy through networks between suppliers and clients as an alternative to traditional communication variants by fax, EDI on networks with VAT.

The E-commerce offers the opportunity to market products all over the world, increasing the number of potential clients by getting rid of geographic barriers between clients and traders.

Among the most important reasons to create a business on the Internet I would give the great number of potential clients who use the Internet and the fact that it does not require high costs.

To set up an e-commerce system from a structural point of view, you need for collaboration of four components (electronic subsystems / computer) for the following roles:

• Client. A device, a classic PC, connected directly or indirectly (a corporate network) to the Internet. The buyer uses this equipment to browse and shop.

• Transactional System. Computer system (hardware & software) responsible for processing orders, initiating payments, records and other business issues involved in the transaction.

• Trader. The computer system (hardware & software) usually located at the dealer, which also hosts updated electronic catalogue of products available to be ordered online.

• Dispatcher pay. Computer system is responsible for the routing of payment instructions within the financial and banking networks, with credit card verification and authorization of payments.

This system plays a gate that connects the global network of Internet banking and financial subnet (subject to increased security requirements), the gate through which access is controlled by a gatekeeper, based on specific credit card information of payment instructions gatekeeper directs information to a card center, this place is

identified and the bank that issued your card payment instruction is forwarded to the bank server connected to interbank networks, once the information reached the bank's network working buyer, are effectual (automatically) a series of checks on the authenticity and available money involved in the transaction card account, depending on the outcome of these checks, the bank decides either the payment (bank transfer - the trader's account can be opened at any another bank), or refuses to make this payment. In both cases, the outcome of the decision (payment confirmation or denial) is sent in real time, going through the chain of servers in the opposite direction, to the client. In other words, within seconds know if the buyer or the bank has made payment.

It's also good to clarify that based on these four basic components have implemented various e-commerce architecture. Some combine several components into a single (sub) system computer, while others implement each component separately.

To define the architecture of electronic commerce systems designers make a projection of a whole season of the main demands/functions of electronic system. It is important that within an electronic system another complex one architecture be clearly destined at all levels considering the details.

The electronic system in fig.3 sums up a multitude of businesses organized into business to business (b2b) and business to consumer (b2c), in short business with companies and business with consumers.

The B2C transactions are being accomplisher between individual buyers and sellers of large companies. The human factor has become more important, interactivity being the basic characteristic for the decision to purchase.

The B2B transactions are characterized by the fact that both participant parts to commercial transaction, the seller and the buyer are institutions.

Evolutions of electronic commerce cleary show that B2B has become an extremely attractive field for the big companies who will exclude from the market their small competitors.

In 1998, the ratio of B2B to B2C was of 5, 5:1, and in 2011 it is estimated to increase to 14:1. In 2000 at world level the total volume of B2B was more than 433 billion $ and in 2001, 1000 billion $.

The forecast on short and medium term considering the growth of electronic commerce is to be determined by B2B which in 2002 represents 80% of the e-commerce; and this will increase to 90% by the end of 2011.

To ensure the success on long term of a project regarding e-commerce, its architecture has to be carefully projected taking into consideration all aspects the system will be confronted with but same hints will have to allow to tally in time when new challenges will come out.

The final vote on the report of the Mediation Committee for the law regarding the electronic signature was given in the Senate meeting on the 28th of June 2001, and the enforcement of the law was made by the president on the 17th of July 2001.

The primary benefit gained by means of this law is that of the E-commerce becoming legal and the apparition of a security guarantee of the transmission of data and electronic payments.

The law of the electronic signature is the key to the gate of E-commerce and this law will operate according to rules that will be developed by MCIT.

Till now the legalization of any authentic document was made by a public notary but taking into consideration this law of electronic signature, the authentication of the document will be made by electronic signature.

Identity certificates stand at the basis of the signature, and these could be issued by a minimum of five organizations of firms accredited by the MCTI. The validity of the certificate will be three years, the date and time of its emission, as well as the date and time of expiration will be available through an electronic registry of certificates kept by the firm that gives certificates. This registry will be available for accessing by means of the Internet or other communication means.

The E-commerce law states that: "The electronic message is any information generated, sent, received or stored by electronic, optical or such similar means including but not limited to, electronic data exchange, electronic mail, telegram, telex or fax." This law applies to any type of information presented by the form of an electronic message used in commercial activities.

Features that make this law is first an exemption from income tax for persons who aim at keeping to some E-commerce systems,

exemption for payment considering any taxes to electronic merchandising of the goods incorporated and on the other hand a standard of security is to be imposed and commerce is deploying as such.

The greatest gain the consumer will have is to be taken into account, is to be protected by merchandise acquisition and transfer.

Although it exists a large number of possible electronic trade options and the number of the options trading is expected to increase due to new types of cases, retailers currently focuses its attention on the video electromagnetic devices, videotext, videodisk and interactive cable television and more recently on the informative highways made by the Internet network, which has taken the market leadership.

With a rhythm supported by development, we can identify the new way of trade, the information highways of the Internet. It has a major impact on the economic landscape of this millenary. The idea that the Internet shopping will not significantly affect the buying habits from the types of stores on the market, due to the fact that the product reaching emotion, smell perception and in general social relationships interaction and spiritual side aspects will still play a key role in purchasing operations of merchandise.

In such a context it is estimated that the Internet will have a significant impact on circuits of sealed products throughout their route like videos, audio, computer software, books, etc., where the stores might even disappear. A major impact but also to a lesser degree is an important part of trade in food products (prepackaged, frozen,etc); an attempt to increase the frequency with which people will use electronic commerce so that can become a second nature to clients.

There are already many models for doing business on the Internet. These can be classified according to the number of suppliers, customer services, as follows: one by one (electronic store), many to one (electronic department store), the more (electronic auction). It is such a chain of services in which each element can be dominant. The first element is the supplier of goods or services, the second is the Internet service supplier who can provide from the web space to the possibility of integration in an e-mail. A third element of the chain can be a consumer, another company, public administration or an employee, in the context of internal transactions within a company.

Here are, in general, some Internet business models: online shop (e-shop),electronic department store (e-mail), electronic public procurement (e-procurement), the electronic auction (e-auction), virtual community (virtual community) electronic services (e-Service Providing).

The basic idea of electronic commerce is to transpose the physical business, material, in an Internet page .So the company presents its product catalogue and t services through the Internet.

The products are generally offered at different price categories taking into account the tendency of clients to test the quality of delivery speed and efficiency before deciding to buy more expensive products. Internet marketing products are usually those that can be described easily and do not require the sense of touch: flight or film tickets, books, CDs, software, tools, spare parts, certain foods or even the vehicle. Other side products were initially considered not suitable for internet trade-shirts, ties, handbags, shoes, for example, sells very well today.

The services complete usually the products offer but often they circumscribed to a wider sphere: for example, in case when bags are sold the site can present also models of shoes that can go with these .In addition the site also may include a guide of colors and styles for businessmen, a guide for success in businesses or the shop may decide to sell handbags and other leather goods, shoes and hats which include on the site others sellers.

Sale prices on the Internet should be lower than those charged for classic orders. Books, for example, are offered over the Internet with a reduction of 10-50%, or at least without additional shipping taxes to be perceived. Services and especially informing services ought to be mostly free. Informing services through periodical publications are given for free at the beginning, through free access or free subscriptions; subsequently, the bidders will initiate additional services like accessing archives and will extend the search possibilities, requesting the user to subscribe and pay in order to benefit from them. It has been observed that the impact of the online subscription upon users is very low: the majority of them remain faithful to classic subscriptions and, generally, only new clients turn to this new subscription system. Despite this, online subscription fees for access to

last minute news or debates with restrictive participation for example, raise interest only if the services provided are of exceptional value.

There are various options for having an electronic store, so to be classified in the literature:

- on a different server (a computer propriety of the company which owns an electronic store) for ample and complex web pages; this will be found within the company if the frequency of changes which must be made is high (ex. news, prices, etc.) or if an intense traffic between the company and the server of the electronic store is necessary.
- on a virtual server (a space propriety of the company which owns an electronic store, on a hard disk from a web supplier computer); correlated with a larger space like www.store.com, solution preferred by the majority of small and medium enterprises – within an electronic universal store (e-mall)

Choosing the best option for this store depends on the telecommunication costs, the technical know-how of the company, the targeted group,the size, structure and medium-term objectives of the future of an electronic store.

In the extent in which it is possible, an electronic store ought to be accessed through various ways: a permanent link/advertisement on a portal site, an ad key-word within searching engines or within the presentation on the Internet of general information about the whole activity of the company or about the whole product range and a window of this site within an electronic universal store (e-mall) or all these simultaneously. What is more, an interesting idea would be establishing names like “www.product1.com” for the product groups, with an exact link to the proper page within the electronic store.

An electronic universal store (e-mall) offers a common front for various electronic stores and can be accomplished by using various transaction models, depending on the type of services which the owner of the store wants to offer. The owner of the store is also the one who is in charge of the marketing of the mall, so that choosing the right mall is an essential decision for the owner of a store.

The right mall is defined as being a mall with a strong network, a good marketing strategy, a suitable presentation front and from which the electronic store can be directly accessed and on various ways; with

a suitable structure of stores and which should offer also services, like offering current, regional or sector information.

Returning to the mentioned example, of the purse store: if the owner wants to present his store within a mall, he must decide whether to opt for a fashion mall or one specialized in accessories.

For some areas, the participation within a mall along with competitive items like jewellery is beneficial. This leads to the increase of traffic mall and so to the increase of the sales figure of each store from its structure. On the other hand, the owner of the mall can make profit from advertising, charges perceived from the members and / or charges on transactions.

The auction for products and items on the Internet proved to be a model of great success. This model can be used for B-2-B electronic commerce and also for the B-2-C one and, due to the fact that it is an area of great interest, can be incorporated also in regular electronic stores.

Like an electronic universal store, an electronic auction usually includes various sellers. The operator of the auction elaborates the mechanism for placing the item of auction, for auction (usually through e-mail) and can also offer payment and shipping services.

The products sold through electronic auction can be last-minute products, of overstock or fluctuating stock, or valuable items for specialized collectors and these include from material objects, metals and agricultural raw materials, to unique art objects. For example, libraries sell through specialized and already well-known electronic auctions, new editions but also used books.

The public acquisition is applicable if governmental bodies or large organizations launch calls for auctioning the acquisition of goods or services. The coverage of typical auctions includes from services in constructions and goods for investments to studies and other large works. The public acquisitions through Internet can include electronic negotiation, the contraction and auction in collaboration, for example.

In order for this model to be also available for small enterprises, platforms or aggregators have been founded within which the sellers act together to obtain more favourable offers from the producers. For example, the stationery industry is an important user of these aggregators.

On the Internet – same as in reality, people sharing common interests meet in communities to discuss or listen to their preferred themes. These forums – as is the interactive discussions group (chat) or the correspondents list (mailing list) – are useful for free time but also for business communications and are called "virtual communities".

The mentioned instruments are often offered as free services, for increasing the traffic on the Internet page and for stimulating the emotional attachment towards this. But, business communications can also be made through a paid service. The direct communication channel or the video-conferences are attractive instruments which cut down travel costs and are used by large companies for scientific communications but also commercial ones.

Depending on the role of the conference organizer (the company, the service provider or association) and the targets he wants to achieve (marketing, benefits, etc.), charges can be of participation or specific to the event, or no charges at all.

The collaboration platforms offer a set of instruments and an informing environment for the collaboration between enterprises, between these and external collaborators and experts, acting like a virtual enterprise from the exterior world. If the platform does not belong to a certain enterprise, the operator must pay a special attention to the status of neutrality, the protection of data and safety of communication, in order not to allow leaks of information of interest for the competition.

The transmission speed has also major importance especially in the technical area. In the same measure, the digital signature becomes an indispensable instrument for running the activity in general or for the contractual area especially.

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MANAGING THE COORDINATION OF MARKETING AND R&D IN THE INNOVATOR PROCESS

Abstract: *Recent empirical studies and surveys on innovation and new product development have stressed the importance of effective coordination between various organizational groups, such as research and development, marketing, and engineering. Problems related to poor interdepartmental cooperation, communication, lack of clarity of goal specification and inadequate definition of project responsibilities have been found to be associated with new product failures.*

This paper is a literature review which incorporates several reviews. The conditions and factors surrounding R&D/marketing collaboration problems are presented, discussed, and modelled. An analysis of the genesis and antecedent conditions for conflicts between R&D and marketing is made in order to develop a basic understanding of the causes of their organizational difficulties. The question regarding the necessity of differentiation and integration of these organizational units is also considered here. The conditions under which functional differentiation is needed and the mechanisms for integrating differentiated groups are discussed. The relative effectiveness of these mechanisms is assessed under different contexts.

Key words: *marketing, R&D, innovation*

JEL classification: *M21*

1. Product innovation: A brief overview

"Product innovation" can describe the development of a physical item that is completely new in the world, or the modification of a single attribute of an existing product to satisfy some users needs. The modification for product innovation may vary across different companies. Even in the same company, the need for product innovation may vary within different product lines. In some cases the goal may be corporate growth by expansion of product lines. In other cases it may be necessary for the very survival of the company.

Based on the nature of changes in marketing requirements and changes in the technological content of the products, Johnson and Jones cite eight types of product innovation programs. The preferences for one strategy over another will depend upon the technological and marketing background of the company. One implication is that the marketing and the R&D departments will have different kinds and levels of responsibilities in these different product programs. According to Johnson and Jones the replacement and reformulation types of activities are primarily the responsibility of the R&D department. But, remerchandising and finding new uses for existing products are in the marketing department's domain. Programs related to product improvement, product line expansion, market extension, and diversification are the joint responsibility of marketing and R&D.

Interdepartmental cooperation is needed at various stages of the product innovation process. Responsibilities for critical decisions are shared both by the R&D and by the marketing groups. Moreover, both factual and evaluative types of information have to be exchanged between the functional groups for effective decision-making. Indeed, the two groups are reciprocally dependent.

Directness of communication between R&D and marketing was related to the success of highly complex projects; the level of agreement between the perceptions of the R&D and sales personnel about project priority, urgency, and potential profitability varies inversely with project complexity. Direct communication between these organizational groups improved the levels of consensus on highly complex projects.

Thus, the roles of the marketing and R&D groups may vary depending upon the nature of the new product programs. However, cooperation between the two groups is necessary in all cases.

2. **Interunit conflict**

The genesis of the problem of interunit conflict often lies in the different (and sometimes conflicting) subgoals of the various groups that may be involved.

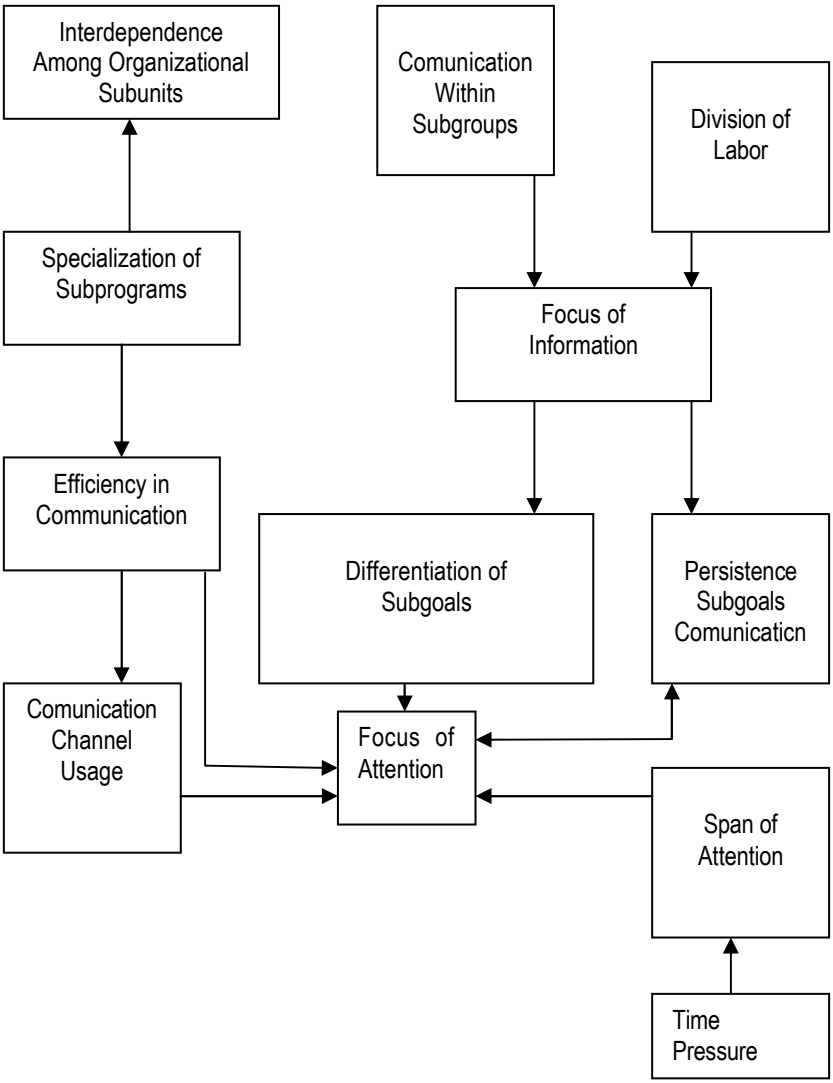

Fig 1 Model of factors affecting selective attention

Such organizational and behavioral factors as the specialized grouping of functions and the professional specializations of personnel often lead to differential perceptions and appreciations of the technical task at hand. Fig. 1 is a schematic from March and Simon that indicates some of the possible relationships among these variables. The potential result of such differential perceptions, exposures, and goals is intergroup conflict, as summarized in the March and Simon model in fig. 2. A better understanding of these relationships should help to clarify the specific problems that one may encounter at the R&D marketing interface. And it should assist in selecting effective methods for managing this interface.

Several authors have examined the problems of integrating scientists and engineers into industrial organizations.

LaPorte postulated the existence of seven main sources of conflict:

(1) profit-making goals that clash with the pursuit of technical knowledge;
(2) the scientist's proclivity for structural autonomy, which is in contrast to management's goal for an integrated structure;
(3) scientists seek freedom from procedural restrains, whereas managers emphasize procedures and rules;
(4) scientists desire authority relations based on professional status, while managerial authority rests on executive position and power,
(5) scientists seek rewards that confer professional status, while managers emphasize rewards that confer organizational status;
(6) there are likely to be tensions placed on R&D via market and competitive threats; and
(7) unstable long-range fundings contribute to the feelings of scientific uncertainty ("good" science needs time to develop and a constancy of funding).

LaPorte found two significant patterns of organizational adjustment. One was the attitude of scientists about the functions of

their peers and associates. Most of the respondents (both scientists and managers) felt that the other "had a good idea of what my job takes". The awareness of each other's functions was reciprocal; there was little or not discrepancy between their perceptions. Another pattern was the ability to live with some fractions. LaPorte provided three major explanations for the existence of these patterns. (1) Nearly all of the managers had been productive scientists at one time in their careers. (2) He found a remarkable similarity in the values and professional standards held by managers and scientists toward professional endeavors and technical methods, even though the profit orientation sometimes precluded the pursuit of these activities. (3) The organization had developed means of neutralizing distractions to scientific endeavors.

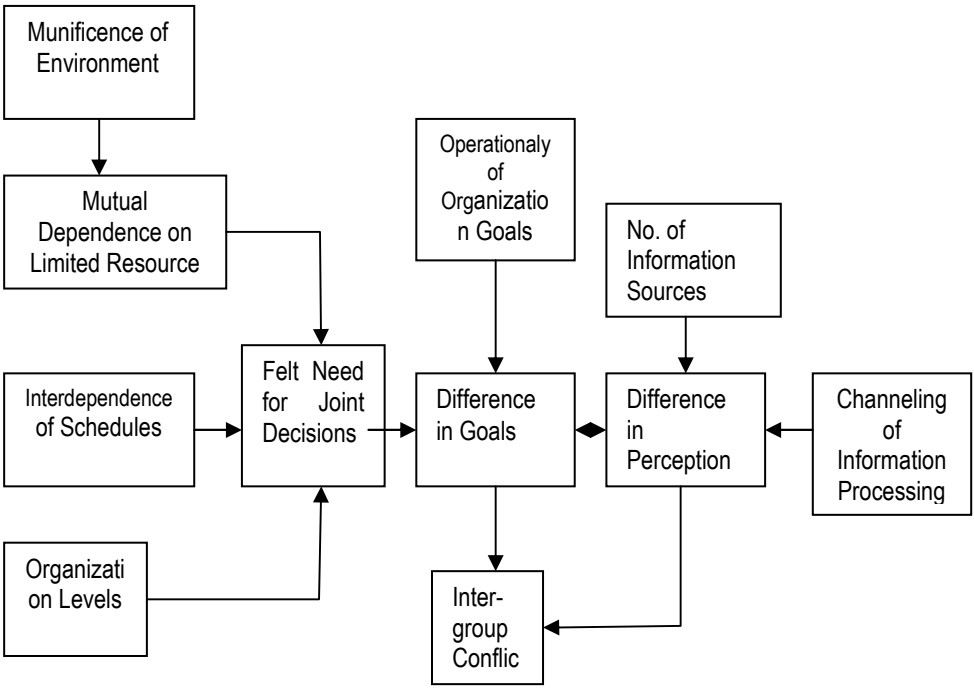

Fig 2. Model of intergroup conflict.

Issues Parties

	Peer	Supervisor-
Technic	Type 1task-related, e.g. milestones, means,	Type 3 projet
Interpe	Type 2 personal likes, etc.	Type 4 power-rule-procedural

Evan identified four types of conflicts in technical organizations, depending on the basic issues and parties involved in the conflicts. Table 1 summarizes four different types of conflicts.

Walton and Dutton made a comprehensive analysis of the antecedent conditions of conflict between functional groups. Mutual task dependency has been identified as a major source of conflict. The general idea in asymmetry between functional groups seems to be that one treated differently from another, one has more prestige or greater dependency than the other, power is not equalized or one has relatively less incentive to cooperate, etc. For example, where research had more prestige than engineering, engineering could not get research to run routine tests for them. (Interference, blocking, and retaliation were apparently engaged in by engineering, with a consequent retaliatory response by research.) The more the influence and power of each unit is consistent with key competitive factors, the lower the level of disrupting interunit conflicts. Specifically, sales and production had the most (balanced) influence in successful container firms, where delivery and quality are crucial. In the food industry, where market expertise and science are essential, sales and R&D had the major (symmetrical) amount of influence.

Differential criteria for performance and reward are another antecedent dimension for conflict. This dimension generally means interdependent departments which have the responsibility for only one side of a cooperative task or total system. It may also mean personal preferences or motivations for attributes, conditions, or rewards that are dissimilar within a total system.

Differentiation and functional specialization is another dimension that seems to come up frequently in the literature. The division of labor (or specialization), the number of administratively separate and distinct but functionally interdependent units, and the difficulties of defining the boundaries and empires of units have all been associated with conflict.

Dependence on common resources has been cited as another antecedent condition for conflict. If the units have interdependent tasks, the conflict can be lessened. But, where two units depend upon a common pool of scarce resources the opportunity for simultaneous, conflicting demands on the same pool is dramatically increased. Dependence on a single pool may cause the units to view their individual successes (goal achievement) as contingent upon each other. Hence, goal conflicts may arise directly from a scarce resources dependency.

Conflict also arises due to role ambiguity and member dissatisfactions with their perceived roles.

At the operational level, measures of conflict were proposed:

(1) interference: the lack of consideration shown for another department; this dimension refers to situations in which members of the unit interfere with or refuse to yield assistance to another unit;

(2) overstatement; the propensity of a unit to exaggerate its needs in order to influence another unit;

(3) purposive withholding of information: one unit not volunteering information that is known utility to another, e.g. it may be "too much work" so the unit may encounter extra costs, etc.

(4) annoyance: feelings of dislike for the manner or style of the other unit or members within the unit; and

(5) distrust: untrustful feelings toward the other unit.

Five organizational contextual factors which lead to conflict between functional groups have also been postulated:

(1) suboptimizing incentives: the rewards or inducements for a unit to pursue suboptimal or proximal goals; the subfactors here are (a) conflict of interest in goals, roles or objectives, and (b) supervisory failure to emphasize and reward cooperation;

(2) jurisdictional ambiguity: the right to initiate work, carry out activities, expend resources or control decisions salient to the subject unit, or salient to the other unit;

(3) obstacles to interunit communication, i.e. (a) physical and space-time barriers that emanate from the subject unit, (b) physical and space-time barriers that are directed toward the subject department, (c) ignorance of the other units problems, needs, procedures, etc., (d) ignorance of subject unit as professed by other units, (e) lack of

interpersonal skills as assessed by self, and (f) lack of interpersonal skills as assessed by others;

(4) frustrating task conditions within the unit, i.e. (a) responsibility load, (b) dependence upon other units, (c) ratio of work to rewards, (d) extent of underuse of unit personnel, (e) job dissatisfaction in the unit, (f) budget constraint, and (g) lack of management development;

(5) social friction within the unit, i.e. (a) unfavorable supervisory style, and (b) internal department dissention.

Empirical data support the conclusion that jurisdictional authority is a major factor leading to intergroup conflict.

3. **Differentiation and inteqration**

The need of differentiation of organizational subunits is embedded in the need for functional specialization. Differentiation was defined as the "state of segmentation of the organizational systems, each of which tends to develop particular attributes in relation to the requirements posed by its external environment". Thus, it is a personal sociopsychological phenomenon. In this context integration is the process of achieving unity of effort among the various subsystems in the accomplishment of the organizations task, where a task involves the design, production and distribution of some goods or services.

Based on the analysis of the existing body of literature, Lawrence and Lorsch generated several hypotheses regarding the differentiation and integration of organizational subsystems:

Hypothesis 1: The greater the certainty of the relevant subenvironment the more formalized the structure of the subsystem.

Hypothesis 2: Subsystems dealing with environments of moderate certainty will have members with more social interpersonal orientations, whereas subsystems coping with either very certain environments or very uncertain environments will have members with more task-oriented interpersonal orientations.

Hypothesis 3: The time orientations of subsystem members will vary directly with the modal time required to get definitive feedback from the relevant subenvironment.

Hypothesis 4: The members of a subsystem will develop a primary concern with the goals of coping with their particular subenvironment.

Hypothesis 5: Given a similar degree of requisite integration, the greater the degree of differentiation a subsystem attributes between pairs of subsystems, the less effective will be the integration between them.

Hypothesis 6: Optimal coping means a degree of differentiation consistent with the requirements of the subenvironment, and a degree of integration consistent with the requirements of the total environment.

Hypothesis 7: When the environment requires both a high degree of subsystem differentiation, and a high degree of integration, integrative devices will tend to emerge.

The above hypotheses generally conform with the findings of other studies which viewed the possibility of synergism through integration of differentiated subunits. Turner postulated that there are two basic promotive conditions for high levels of both differentiation and integration of organizational subsystems:

(1) an egalitarian management style in which the parties feel that their individuality is respected, their needs for affiliation, approval and expression are fulfilled, and their individuality (differentiation) is combined with a high degree of voluntary communication (integration); and

(2) an open-mind mentality in which there are a large number of different ideas that are being communicated and looked at from many viewpoints.

Tumer also postulated that organizational effectiveness would be dependent upon the differentiation and integration of the subunits. Galbraith examined different types of integration mechanisms. Liaison groups were found to be effective in mediating between product design and process design personnel. Galbraith observed that the uncertainty was very high at this stage. The groups were dependent in both a reciprocal and a sequential manner. A task force was found to be effective, where the primary focus was to supplement the formal hierarchy and provide a quick reaction capability to avoid damaging schedule disruptions.

The effectiveness of different behavior styles of integrator seems to vary with the nature of the subunits. Fisher found that the "extemal-professional colleagues" - those who held jobs that were oriented largely toward the firm's extemal environment - sought out

entrepreneurial project managers. The extemal-professional jobs were those in sales, advertising, law, and personnel. In contrast, the "intemal institutional colleagues" - those who held jobs in accounting, purchasing, and manufacturing and who were predominantly concemed with stabilizing and maintaining the firm's intemal systems and procedures - wanted moderate, less entrepreneurial behaviors in their project managers. Extemal-professional colleagues preferred a manager who was adventurous, daring, individualistic, and opportunistic. Intemal-institutional colleagues, on the other hand, preferred a product manager who was deliberate, methodical, steady, and capable of providing structured guidance.

At the informal collegial level it has been found that R&D personnel depend on a few "gatekeepers" as information sources. The "gatekeepers", who are high performers and consequently have high status in the organization, act as mediators and linking pins between the R&D scientist/engineers and others outside of R&D. Chakrabarti and O'Keefe observed the multidimensional nature of the informal roles performed by such key communicators in R&D laboratories. Some of the interdepartmental conflicts were resolved through informal coordination by such key persons.

4. **Approaches to coordinating mechanisms**

Based on the above review and discussion three different approaches to coordination mechanisms have been defined. The first approach is the stage-dominant (S-D) approach. The basic assumptions under this approach are:

(1) there are formal groups or functions that are either technically or organizationally specialized, or both;

(2) the functions of the groups or entities are narrowly defined to include only specifically delimited activities;

(3) the incumbents describe the new product development (NPD) process in terms of responsibilities, functionally discrete entities or segregated activities and responsibilities that accrue to specialized entities; and

(4) formal or institutionalized transfer points and interfaces exist at several points in the NPD process at which the project is handed-off or signed-off for by one party and signed-on by another.

The second approach is the process-dominant (P-D) approach. The characteristics of this approach are:

(1) there are no apparent discrete and define transfer points where parties hand-off a completed entity in the NPD process, and where the parties each sign-off and sign-on;

(2) the functions phase in and out on the basis of gradual manpower build-up/build-down processes, rather than an abrupt assignment/reassignment of all personnel;

(3) the incumbents converse about the new product-development (NPD) process in terms of some finite periods of interaction with other parties, as opposed to either continual interaction or a hand-off point (major decision point at which the parties sign off and on);

(4) the incumbents identify with their functional specialties, but also have some degree of empathy and comprehension of the other functions; the major emphasis is on functional matters - the incumbents speak largely in terms of, and focus on, the functions;

(5) there are no, or few, paper-work systems to be filed at the phase-out/phase-in transition points;

(6) products, entities, bread-board models, etc. are expected to "come back" from the downstream function, e.g. a new product can oscillate between marketing and research for some period of time.

The task-dominant (T-D) approach, which is best exemplified by the use of task-forces, can be characterized as follows:

(1) the incumbents have a strong orientation and focus toward the task and the end product; they talk in terms of products rather than functions, objectives rather than processes, and task-goals rather than functional achievements;

(2) there are no formal transfers relative to functions and products; rather, personnel go "on" or "off' the teams as the work evolves;

(3) people are specialists, but they are not functionally designated; they are related in terms of their contributions to the team rather than their functions;

(4) individuals have frequent contacts with each other, with crossing and over-lapping communication channels.

In an analysis of the procedures followed by two high technology oriented companies, Texax Instruments and Digital Equipment Corporation, Schwartz noted the prevalent use of ad hoc taskforces. These companies face very dynamic technological and marketing environments, with the consequent need to act quickly on any new idea. The task-force approach seemed to provide the flexibility needed in such a situation. Another management style observed by Schwartz in these companies was termed "factoring". As he described it, "factoring" is the process of breaking a large project into smaller subprojects with measurable objectives. By factoring, the commitment of major funds are either postponed or distributed over a period of time by the sequential outcome of the subtasks. This leads the innovation process to an evolutionary one with more manageable schedules and sequential activities. This also reduces the undue competition for scarce money by several competing project initiators. The risk of large-scale failures is also minimized. The effectiveness of these approaches will be dependent upon the contingent conditions, such as the structure of the organizations, the environmental conditions, the structure of R&D, the nature of the concerns of the R&D managers and their perspectives, the funding mechanisms, and the nature of the activities. As noted earlier, the new product strategies in different corporations vary depending on the changes in technological and marketing characteristics sought. To understand the appropriateness of these models for coordination of R&D and marketing groups, one should look at the contextual conditions. Product managers will play the main linking role in both the stagedominant and the process-dominant approaches. Task-forces, venture groups, etc. play the linking function in the task-dominant approach.

5. **Summary and conclusions**

The importance of integration between marketing and R&D groups in particular and functional groups in general has been discussed. Integrative cooperation is particularly necessary in complex

situations where the technology and the target market are new and novel, thus contributing some elements of uncertainty.

The antecedents and conditions promoting interunit conflict have been reviewed here. An understanding of the genesis of interdepartmental conflict may provide some suggestions for its avoidance. Some mechanisms for integration and conflict have been discussed. The relative effectiveness of these mechanisms are contingent upon the environmental conditions. The implication for management is that, for best results, the organization design should be compatible with these contingent conditions.

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THE DISTINCTION BETWEEN ACCOUNTING DEPRECIATION AND TAX DEPRECIATION

Abstract. *Although the issue of deferred taxes is very important, this is verry little known by taxpayers and tax authorities, both in spirit and content, but particularly in terms of methodology for implementing. This material is presenting the meaning and content of deferred taxes, the distinction between accounting depreciation and tax depreciation, practical methodology for the application of deferred taxes, all the example of tax incentives granted under the accelerated depreciation applied in the art. 24 para. (9) of the Tax Code.*

Keywords: *tax; profit tax; deferred taxes; income; taxable income; loss; loss accounting; tax loss; the financial; tax depreciation; depreciation accounting; recovery of losses; during standardized service; tax deductible expenses; depreciation linear; accelerated depreciation.*

Taxpayers, tax authorities and other financial professionals, accounting and taxation were unclear about the meaning and content of deferred taxes, but particularly on the distinction between accounting depreciation and tax depreciation in terms of methodology and practical application deferred taxes.

In clarifying these issues should begin by following legal provisions, even though, surprisingly, does not contain provisions on the line.

The Law no. 82/1991 - Accounting Law provides:

Art 19. (1) In accounting, the cumulative gain or loss is determined at the beginning of the financial year. Closure of income and expenditure is made, usually at the financial year-end.

(2) The final result of the financial year is set at its closure.

(3) The profit distribution shall be accounted for by destination, after the approval of annual financial statements.

(4) Deferred accounting loss is covered by the profit of the financial year and the reported profit is covered by the reserves, share premium and capital, according to the decision of general meeting of shareholders or members.

Through the Tax Code is specified:

"Art 24 – Fiscal depreciation. [...]

(9) In case of accelerated depreciation, depreciation is calculated as follows:

a) for the first year of use, depreciation does not exceed 50% of the value of the asset;

b) for the following years of use, depreciation is calculated by comparing the amount of depreciation of the asset remaining in the normal use of his left. "

"Art 26. Tax Losses

(1) Annual loss, as determined by income tax return, be recovered from the taxable profits obtained in the next 5 consecutive years. Recovery of losses will be in the order listed, at the time of each payment of income tax, according to legal provisions in force since their registration. [...]

Taking the example of a fixed asset inventory value of 10.000 lei and normed service duration (n.s.d.) for 5 years, in Table 1 presents the straight-line (linear) depreciation tax deductible expenses, which are much different from those generated by accelerated depreciation.

Table 1

No.	V.i.	N.S.D.	Year					Total depreciation
			1	2	3	4	5	
0	1	2	3	4	5	6	7	8=3+4+5+6+7
1	Deductible expenses with ***straight-line depreciation***							
2	10.000	5	2.000	2.000	2.000	2.000	2.000	10.000
3	Deductible expenses with ***accelerated depreciation***							
4	10.000	5	5.000	1.250	1.250	1.250	1.250	10.000

Notations and specifications: V.i. = value of inventory. N.S.D. or n.s.d. = Normed service duration

In case of application the accelerated depreciation method, according to art. 24 para. (15) of the Tax Code, depreciation is calculated as follows:

- for the first year of use, depreciation = 50% from the value of the asset = 50% x 10.000 = 5.000 Lei;
- for each remaining year of the next four years remaining depreciation = value of the depreciated asset: the normal use of his remaining = (10.000-5.000) lei: (5-1) years = 5.000 lei: 4 years = 1.250 lei.

Since accelerated depreciation is applied very large changes occur, sometimes radical, as a result of the unit tax. Application of accelerated depreciation has the effect, in the year of use, either reduction, sometimes substantial, the taxable profit and, consequently, and the tax on profit due, either moving at a loss, in which case no longer drive due to tax on profit.

Most important is to be noted that the negative fiscal effects of applying accelerated depreciation (which may be reducing the taxable profit or tax loss in the switch unit on) are called temporary, only the first or early in the asset subject to accelerated depreciation.

In other words, negative tax effects resulting from the application of accelerated depreciation occurs only in the first year or in the early years of the normal service life of the asset under accelerated depreciation.

Throughout the normed service duration (n.s.d.) of the asset for which accelerated depreciation was applied (which led to such a change in the fiscal result) under normal conditions required to achieve the same fiscal result as that tax would be obtained in case of the straight-line depreciation.

If the unit was registered with tax loss in the first year of the asset under accelerated depreciation, the loss will be recovered from the taxable profits obtained in the next 5 consecutive years, according to art. 26 of the Tax Code.

Recovery of losses will be in the order listed, at the time of each payment of income tax, according to legal provisions in force since their registration.

Tax changes are only "redistributive", only during the normed service duration of the asset under accelerated depreciation.

Table 2

Line (**L**).	Indicator	Year					Total
		1	2	3	4	5	
0	1	2	3	4	5	6	7=2+3++4+5+6
	Under the ***straight-line depreciation***						
1	Total Incomes.	50.000	50.000	50.000	50.000	50.000	250.000
2	Expenditures, without expense.	47.000	47.000	47.000	47.000	45.000	235.000
3	Expenditures with depreciaton.	2.000	2.000	2.000	2.000	2.000	10.000
4	Total expenses = L2 + L3	49.000	49.000	49.000	49.000	49.000	245.000
5	Taxable profit, distinct per each year = L1–L4	1.000	1.000	1.000	1.000	1.000	5.000
6	Profit tax, distinct per each year = L5 x 16%	160	160	160	160	160	800
7	Taxable profit, per cumulative.	1.000	2.000	3.000	4.000	5.000	5.000
8	Profit tax, on cumulative.	160	320	480	640	800	800
	Under the ***accelerated depreciaton***						
9	Total incomes.	50.000	50.000	50.000	50.000	50.000	500.000
10	Expenditures, without depreciaton expense.	47.000	47.000	47.000	47.000	45.000	235.000
11	Expenditures with accelerated depreciaton.	5.000	1. 250	1. 250	1. 250	1. 250	10.000
12	Total expenses = L9 + l10	52.000	48.250	48.250	48.250	48.250	245.000
13	Taxable profit, distinct per each year = L9 – L12	–2.000	1.750	1.750	1.750	1.750	5.000
14	Profit tax, distinct per each year = L13 x 16%	–320	280	280	280	280	800
15	Taxable profit, per cumulative.	–2.000	–250	1.500	3.250	5.000	5.000

16	Profit tax, on cumulative.	–320	–40	240	520	800	800

Notations and specifications: L = line. Pf. = profit. Tx. = tax. Tx. pf. = taxable profit. Pf. tx. = profit tax.

Indicators in the tables are calculated only on the depreciaton period of 5 years.

According to art. 19 of the Tax Code: Taxable profit (Tx.pf.) = total income (T.i.) - total cost (T.c.) - non-taxable income (ntx.I) + non-deductible expenses (nde.E.).

Tx.pf. = T.i. – T.c. – ntx.I. + nde.E. = (T.i. – ntx.I.) –(T.c. – nde.E.)

If ntx.I. = 0 and nde.E. = 0, as in this example, the taxable profit (Tx.pf.) = total income (T.i.) - total cost (T.c.) - 0 + 0 = total income (T.i.) - total cost (T.c.).

Tx.pf. = T.i. - T.e. - 0 + 0 = T.i. - T.e.

Profit tax (Pf.tx.) is calculated by applying the rate of tax profit (R.tx.pf.), 16% on taxable profit (Tx.pf.).

Pf.tx. = R.tx.pf. x Tx.pf. = 16% x Tx.pf.

At the end of the normed service duration of the asset under accelerated depreciation, tax result (taxable profit and tax on profit due to the state budget), on the whole, must be the same by both methods of depreciation.

If the case of straight-line depreciation, in wich depreciation, in absolute terms, is the same, uniform, on the entire normed service duration of the asset subject to depreciation, there can be tax deferred.

In other words, of all depreciation charged systems are permitted by law, only the application of accelerated depreciation lead to tax deferred.

In order to fully understand the problem correctly and deferred taxation, we start from the example of the table. 2, which presents the statement of accounting and taxation unit, both in terms of applying the straight-line and for accelerated depreciation.

Taxable income, entered in line 15, is calculated on the whole, with the recovery of tax loss, of the 320 lei, from the first-year depreciation.

- First year:

- taxable profit = tax loss → lei -2000 (Pd.fs.) = 2,000 lei.

- profit tax = - 2.000 x 16% = 0 lei taxable profit x 16% = 0 lei.

- In the second year:

- first-year taxable profit + taxable profit in the second year = -2000 + 1750 = - 250 lei → tax loss (Pd.fs.) = 250 lei. Tax loss of 250 lei, failure is not due to profit this year, but due to the fact that the taxable profit obtained in the second year of 1.750 lei, it was large (over 2.000 million) to cover, in full, the tax loss in the first year, 2.000 lei, rather than loss caused by application of accelerated depreciation.

- profit tax= - 250 x 16% = 0 lei taxable profit x 16% = 0 lei.

- Third year:

- taxable profit = taxable profit in the first year + taxable profit of the second year + taxable profit in the third year = -2000-250 + 1750 = 1.500 lei.

- profit tax= 1.500 x 16% = 240 lei.

- In the fourth year:

- taxable profit = taxable profit in the first year + taxable profit of the second year + taxable profit in the third year + taxable profit of the fourth year = - 2000-250 + 1750 + 1750 = 3,250 lei.

- profit tax= 3.250 x 16% = 520 lei.

- In the fifth year:

- taxable income = taxable profit in the first year + taxable profit of the second year + taxable profit from the third year + taxable profit of the fourth year + taxable profit from the fifth year = - 2000-250 + 1750 + 1750 + 1750 = 5000 lei.

- profit tax = 5.000 x 16% = 800 lei.

From the table no. 2 is following conclusions:

1.In case of straight-line depreciation, the profit tax is 160 lei per year, respectively of 160 lei per year : 12 months= 13.34 lei per month.

At the end of 5 years straight-line depreciation, on the whole, the unit is registered with taxable profit of 5000 lei and a profit tax of 800 lei.

So as I said, in case of straight-line depreciation, which is the normal situation, common, there can be tax deferred.

If accelerated depreciation, the situation changes radically: the first two years the unit switches from taxable income (computed separately for each year), 160 lei, the first year and 160 lei, in the second year, the loss tax of 320 lei, the first year, and 40 lei, in the second year.

Tax loss is recorded in the third year that the (360-320): 13,34 = 40: 13,34 = 3 months.

But starting in the fourth (April), in the third year, the unit starts to record the taxable profit (tax).

At the end of five years of accelerated depreciation, the unit recorded on the whole, the same taxable profit, of 5.000 lei, and the same tax on profit of 800 lei, as if straight-line depreciation.

The changes of taxable profit and tax on profit (each year separately and together, until the end) were only in "structure" only between years, and not on total (at the end of five years).

On the table no. 2, was prepared table. 3, which shows clear and precise the meaning and the content of the concept of ”deferred taxes. "

Application of tax incentives granted by Art. 24 para. (9) of the Tax Code, consisting in accepting the depreciation expenses are deductible in calculating taxable profits, of 5.000 lei (in case of accelerated depreciation), instead of 2.000 lei (in case of straight-line depreciation) led to a radical change in tax result of the unit over the 5 years of depreciaton **(=** normed service duration of depreciation).

With straight-line depreciation, the tax payable is uniform in each year of 160 lei per year, respectively of 160 lei per year: 12 months = 13.34 lei per month.

Under accelerated depreciation, the unit has not only reduced the tax burden, but in the first year has seen a fairly large tax loss, of 320

lei, equal to the income tax due on the first two years under the straight-line depreciation.

More specifically, in the first year the state budget recorded a "tax gap" with a tax of 160 lei unearned, generated by deliberate acceptance, knowingly, of granting tax Facility [enrolled in art. 24 para. (9) of the Tax Code] in the form of accelerated depreciation.

Tax loss in the first year is 320 lei.

This "tax gap" is only temporary, not permanent: the state agreed, knowingly, deliberately, a "delay in collecting tax" of 160 lei, from the first year + 160 lei, from the second = 320 lei.

The state has not definitively abandoned the loss of tax of 320 lei, registered in the first two years as a result of granting facility in the form of accelerated depreciation tax.

After the first year (when applied accelerated depreciation), there is registered a uniformity in the level of depreciation, an annual straight-line depreciation, which leads to increased uniformity in other indicators.

The situation is different in the taxable income and, in particular, in the profit tax, on the whole, since it occurs in the influence of "tax deferred" payment of the first two years and three months.

To better understand the problem at hand, we take the example of a company who had the following situation.

1 - Total incomes = 10.000 lei.

2 – The Unit is not recorded with non-taxable income.

3 - Total expenses without depreciation expense = 47.000 lei.

4 – The Unit is not recorded with non-deductible expenses.

5 - Depreciation charges: are presented in Table. 1.

6 - Profit tax rate = 16%.

7 - Profit tax is presented in the table. 2, both in terms of applying the straight-line depreciation and in terms of applying accelerated depreciation.

8 - Deferred payment taxes, generated by the granting of tax incentives in the form of accelerated depreciation in the art. 24 para. (15) of the Tax Code, are presented in Table. 3.

Table 3 **Deffered taxes**

No	Indicator		Year					Total
			1	2	3	4	5	
0	1		2	3	4	5	6	7
1	Tax, per cumulative, in the conditions of ***depreciation*:**	Linear	160	320	480	640	800	800
2		Accelerated	0	0	+240	+520	+800	800
3	Deffered tax, in the conditions of ***depreciation*:**	Linear	0	0	0	0	0	0
4		Accelerated = I.1–I.2	160–0= 160	320–0= 320	480–240= 240	640–520= 120	800–800= 0	0

Under accelerated depreciation, the annual unrealised tax profits, on the whole = annual tax deferred, just as shown in Table. 3.

Deferred annual tax = annual tax, calculated on the whole, under the straight-line depreciation - the annual tax, calculated on the whole, under accelerated depreciation.

In case of the straight-line depreciation, respectively of the lack of tax incentives, it can not speak of deferred taxes.

Deferred taxes arise and exist only in terms of providing tax incentives.

Tax and accounting rules

In the following is presenting the tax and accounting regulations strictly necessary to be considered in properly addressing the issues of:

1. Accounting depreciation.
2. Tax depreciation.
3. The impact of the revaluation of fixed assets:
3.1. Accounting and tax value of depreciable assets.
3.2. Accounting and tax depreciation.
3.5. Taxable income and deferred taxes.

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MODELING AND SIMULATION OF RISK IN DECISIONAL MULTICRITERIAL PROCESS HUMAN RESOURCE TRAINING

Abstract: *In the activity of human resources formation, the organization's management must take decisions concerning the management of certain risks of nature that lead to the fulfilment of the objectives of the formation[1,5]. The multicriterial decision methods offer a strong tool that can support the managers in solving some modeling problems of the risks. The subject of the article treats the modeling and simulating of some risks in the formation of human resources, by applying the mathematical tools offered by the methods of multicriterial decisions and of the risks quantification with the informatical product Microsoft Excel.*

Keywords: *methods of multicriterial decisions, human resources, modeling, simulation*

1. Introduction. Characteristics of methods of multiatribut decision

In essence, decision-making in an uncertain universe, or measurable, is aware of more possibilities to act in a given context, analyze its consequences in relation to an intended purpose, choosing and implementing actions that considered optimal in an adopted vision.

Evaluation of decision alternatives with risk and uncertainty, is most often based on indicators as criteria of evaluation[7,8,9]. Problems in determining the optimal variant is sought in relation to several criteria are multicriteria optimization problems: multiatribut and multiobiectiv optimization[6]. Between the two types of multi-criteria optimization problems there are some differences, namely:

In multiatribut optimization, the number of decision alternatives is finite and each option is evaluated through multiple

criteria or quantitative attributes and / or qualitative. The term attribute may be known as "objective or criteria. **Multiatribut decision methods** (Multiple Attribute Decision Making - MADM) **refer to choosing the best of a finite set of alternatives** that are compared with each other in relation to a number final criteria.

The optimization decision multiobiectiv number of variants is infinite and each variant is evaluated by several criteria expressed by mathematical functions.

The literature has pointed out that **MADM select the best alternative from a finite number of alternative models and MODM modeling the best alternative**. For choosing the optimal decision-making hierarchy is required in relation to all available alternatives desired criteria. Note that the optimal way in relation to a criterion, it is generally suboptimal compared to other criteria, thus the search for the version that made the best compromise for all criteria. For that transforms the size indicators, allowing both versions to compare and aggregation of evaluation criteria.

In addressing multiatribut decision models find that they suppose the existence of a multitude of data types and a set of attributes that are required in relation to choosing the best. Any forms of matter, which is made to select an optimal choice with respect to several attributes, according to a process that can be algoritmizat, leads naturally to a multiatribut decision model (MADM).

In connection with the multitude of variants and optimal choice of candidate decision, the only restriction that is required, is that it is finite and has at least two elements. Each variant of this set is assessed through the multitude of attributes that are assumed to be non-empty. Be made to select variants such a way as to be satisfied, the optimal way, the attributes considered. When the number of attributes is greater, the complexity of the problem increases considerably. The increasing complexity derives from the fact that in most real situations, the attributes are conflicting, a variant may be on a very good situation in relation to one of the attributes, but a very weak compared with another attribute. As a rule, requires that the attributes of MADM is to be mutually independent.

We appreciate that in the training process human resource risk management decisions multiatribut refers to the development and decision making in the presence of multiple attributes usually in

conflict[4]. This kind of conflict can have many causes, the most important being:

- The inherent conflict of attributes,

-existence of multiple decision makers, experts, specialists, participating in actions of human resource training,

- consideration of several states, situations, events and vulnerabilities that may materialize in developing strategies and training, preparation, performan and evaluation of a training project.

On the other hand, the optimal choice of variant decision involves both establishing a method or a mathematical algorithm and its programming in some software, and then validating the model.

Multiatribut decision problems related to risk management in human resource training can be very different but have the following features:

● ***alternatives***. There are a finite number of alternatives that may be proposed, researched, selected, evaluated and ranked according to the criteria

● ***different attributes***. Each problem has multiple attributes and specific. Any responsible human resource training should generate relevant attributes or to identify characteristic each problem set. In cases of multiple attributes, they must be placed in a hyerarchical structure (attributes major subatribute sub-subatribute etc.)

● ***conflicts between attributes***. Multiple attributes are usually in conflict with each other.

● ***incompatibility indicators measure***. Each attribute has its own evaluation unit.

● ***the importance of each attribute (or coefficient of importance***). Multiatribut decision models requires information on the relative importance of each attribute, given a set of coefficients or weights whose sum is equal to one. The weights will be measured, calculated or distributed directly by the trainer can use human resources as appropriate vector method or the method of least squares.

● ***the decision chart*** . A decision problem multiatribut can be expressed in a matrix form. A decision matrix "D" is a matrix of "whose elements aij indicates the performance (result) alternative "i "(A_i) in the presence of attribute j (Cj), since Ai (i = 1, ..., m) is denoted by a_i = row vector [a_{i1},a_{i2}, a_{i3}, ..., a_{in}] and column vector aj =

$[a_{1j}, a_{2j}, a_{3j}, ..., a_{mj}]$, shows the contrast of each alternative on attribute Cj[4].

2. Practical aplication in risk modeling and simulation in training human resource in decisonal multiatribut process

To address the need to take into account several decision criteria, we created and developed a specific application of multicriteria decision-making situation in human resource training. To solve the problem of multicriteria, risk modeling and simulation of human resource training, I took a decision matrix literature[2] cited in the model shown in Table 1, we created the model in Fig.1 the development of a multiple choice training course, I have used MicrosoftExcel in software simulations, as follows:

Table 1.

Risks	S_1					S_h					S_s				
Decision criteria	C_1	...	C_j	...	C_n	C_1	...	C_j	...	C_n	C_1	...	C_j	...	C_n
Importance coeficients	k_1	...	k_j	...	k_n	k_1	...	k_j	...	k_n	k_1	...	k_j	...	k_n
V_1	a_{111}	...	a_{1j1}	...	a_{1n1}	a_{11h}	...	a_{1jh}	...	a_{1nh}	a_{11s}	...	a_{1js}	...	a_{1ns}
V_2	a_{211}	...	a_{2j1}	...	a_{2n1}	a_{21h}	...	a_{2jh}	...	a_{2nh}	a_{21s}	...	a_{2js}	...	a_{2ns}
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
V_i	a_{i11}	...	a_{ij1}	...	a_{in1}	a_{i1h}	...	a_{ijh}	...	a_{inh}	a_{i1s}	...	a_{ijs}	...	a_{ins}
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
V_m	a_{m11}	...	a_{mj1}	...	a_{mn1}	a_{m1h}	...	a_{mjh}	...	a_{mnh}	a_{m1s}	...	a_{mjs}	...	a_{mns}

Decisional chart for a multicriterial problem

where: V_i = variant i , for i=1,2,3.....m

S_h nature shape h(probability of risk appearance h), for h=1,2,3.....s

C_j - criteria j for j =1,2,3.....n

k_j – importance coeficient given to the criterion j,for j=1,2,3.....n

a_{ijh} – consequence (performance) of variant i, for the criteria j in the shape of objective conditions h(under the incidence of h).

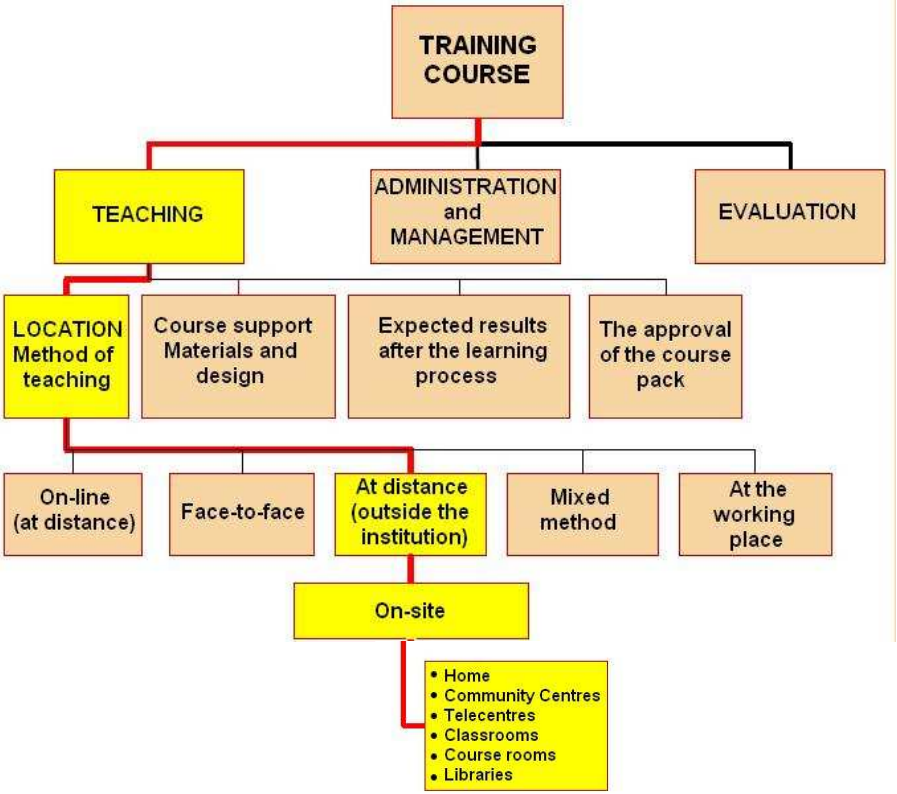

Fig.1. Model regarding development of a training course

The Path RED (yellow bokes) can represent a "path" as, posibil variants of location and modalities of course development: on-line(at distance) face to face, at distance (out from institution); mixt modality; at work, for which we can make a risk analysis:

COURSE/ TRAINING (TEACHING project)

COURSE PACKAGE (Materials and Design)

We have:

1. We note the state of nature (possible risk):

S_1= failure of the use of relevant materials and ongoing support package;

S_2 hiring competent, qualified for production and package design of course materials;

S_3 Failure accreditation course.

Solve an optimization problem multiatribut risks if the S1, S2, S3 defined above probability: p (S1) = 0.4, p (S2) = 0.5, p (S3) = 0.1 .

2. **Impact (output**)

a. Students will acquire skills in the course package;

b. damage reputation of the trainer

c. The qualifications are not recognized;

d. Graduates will be employed / recognized.

3. Secundary results

a. Financial;

b. Legal;

c. Political;

d. Social

4. Instruments of prevention/ control of preparation and development of the training course

a. sistem of quality for the insurance of materials and package of the course;

b.the library to consult the necessary bibliography for training course ;

c.politics of checking the course variants;

d. qualified and competent personal

5.The atributs (criterias) to which we report the development posibilities of the training course we choose them to be:

C_1= the quality of teaching activities;

C_2 course cost;

C_3 course duration

6. The importance coeficients of crieria we suppose they are : $k_1=0,6$, $k_2=0,2$, $k_3=0,2$.

7.The possibilities of organize and development of the training course can be:

V_1= on-line teaching (at distance);

V_2 teaching„face to face" in the classroom;

V_3 teaching at distance (out of institution);

V_4 teaching through mixt method;

V_5 teaching made at work.

Solving the problem:

Choosing the optimal possibilities from the candidates at the decision V_1,V_2,V_3,V_4,V_5 in relation to the nature shapes:

S_1= Failure to use relevant materials and ongoing support package;

S_2 Failure hiring competent, qualified for production and design course materials package

S_3 The failure of the course accreditation.

criteria:

C_1 (quality of teaching activities)

C_2 (course cost),

C_3 (duration course)

and importance coeficients

-k_1=0,6, k_2=0,2, k_3=0,2.

Steps to follow:

Step 1. We calculate the elements a_{ijh} from the interior of the Table 1.,as the product between the level of values given to the criteria C_j on a Likert scale from 1 to 5, and also $N_i(C_j)$, of coeficients of importance k_j and of probabilities of risk appearance $p(S_h)$. This product is calculated through the formula:

$a_{ijh}= N_i(C_j)k_j\ p(S_h)$ where: (1)

i =1,2,3,4,5; j=1,2,3; h=1,2,3.

In the formula (1) are known all the elements less $N_i(C_j)$, respectively the valoric level of decision criterias situated on a Likert scale. For this we built the chart 2., with the values of levels we passed in the chart interior. Establishing the values was realised by the human resource trainer in a subjective way, according to his experience . The values calculation a_{ijh} is realised automatically if we introduce the problem dates in the soft MicrosoftExcel.

Table 2.

Values levels $N_i(C_j)$ acordding to the criteria C_j on a Likert scale from 1 to 5

Shapes of nature	p(S_1)=0,4			p (S_2)=0,5			p(S_3)=0,1		
Decision criteria	C_1	C_2	C_3	C_1	C_2	C_3	C_1	C_2	C_3
Coefficients of importance (k)	*0,6*	*0,2*	*0,2*	*0,6*	*0,2*	*0,2*	*0,6*	*0,2*	*0,2*
V_1	4	5	3	4	5	3	4	5	3
V_2	3	3	5	3	3	5	3	3	5
V_3	5	4	3	3	4	3	3	4	3
V_4	4	4	4	4	3	4	4	2	4
V_5	5	3	5	5	3	5	5	3	5

For example, if we choose from the chart from the tabel 2., the components $N_1(C_1)=4$, $k_1=0,6$, $p(S_1)=0,4$, and we introduce these dates in Excel we obtain the value of a_{111} equal with 0,96, calculated and put automatically by the program Excel after the formula (1) this way:

$a_{111}= 4*0,6*4,4=0,96$ (2)

We choose $N_2(C_1)=2$, $k_1=0,6$, $p(S_1)=0,4$, and a_{211} is calculated and automatically written by the program Excel after the formula (1) this way:

$a_{211}=3*0,6*0,4=0,72$ (3)

In the same way we calculate and write automatically all the elements a_{ijh} as are written their values in the new chart 3.:

Table 3.

The decisional chart for the multicriterial problem

Shapes of nature	S_1			S_2			S_3		
Criterias of decision	C_1	C_2	C_3	C_1	C_2	C_3	C_1	C_2	C_3
Coeficients of importance	*0,6*	*0,2*	*0,2*	*0,6*	*0,2*	*0,2*	*0,6*	*0,2*	*0,2*
V_1	0,96	0,40	0,24	1,20	0,50	0,30	0,24	0,10	0,26
V_2	0,72	0,24	0,40	0,90	0,30	0,50	0,18	0,06	0,10
V_3	0,72	0,32	0,24	0,90	0,40	0,30	0,18	0,08	0,06
V_4	0,96	0,32	0,32	1,20	0,30	0,40	0,24	0,04	0,08
V_5	1,20	0,24	0,40	1,50	0,30	0,50	0,30	0,06	0,10

Stage 2.

Based on this decision matrices and specific notations made on the model of organizing and conducting a training course can apply multiple methods and decision criteria, including:

- Decision criteria under uncertainty (Laplace, Hurwicz etc)
- mathematical expectancy method (where the probabilities are known manifestation of the state of nature), a method that will be used by us.

Application of this method is subject to the restriction that all the attributes to be measured on the same Likert scale. To do this, first we will proceed to converting all utilities consequences.

In the process of choosing an optimal decision alternatives, the decisive factor is the experience and intuition and decision-maker to take account of preference we use the concept of utility. Utility is a subjective size and **expressed satisfaction that you get decider when**

opting for one or other of the following decision in relation to its objectives and organization[3].

Utility calculated in the method described above is a dimensionless indicator of what makes the utility of various features of a choice decision to be additive. Utility can be used in multicriteria decision models, where the units are working with different decision criteria.

The usefulness of an action determines the conduct of decision-maker, directing it toward good decisions under conditions of risk. It is a subjective and size variations associated with each determined by its maximum value which is optimal decision alternative. However, it is obvious that the relative and subjective concept of utility, which is defined by regimes as a function with values in the interval [0,1] reflecting the value of a maximum preference and the minimum zero.

The mathematical model used to calculate the utility is as follows:

$U_{ijh} = (a_{ijh} - a^{o}_{jh})/ (a'_{ijh} - a^{o}_{jh})$ where: (4)

U_{ijh} - consequences and utility version, the criterion states j in the state of nature

$h(a_{ijh})$;

a'_{j} - most favorable result for the criterion j of the state of nature h;

a^{o}_{j} - worst result for the same criterion j in the state of nature h

Secondly, to calculate utilities variants V_1,V_2,V_3,V_4,V_5 for the criteria C_1 in conditions of nature shape S_1, and to find out the values from the 1 column of the tabel 4.28 we use the following. In the program MicrosoftExcel we introduce the values from the column 1 written in the chart 4.,to find out the value of U_{ijh} like in the example below, the result beeing automatically written by the soft.

U_{111} = (0,96-0,72)/(1,20-0,72), U_{211}=(0,72-0,72)/(1,20-0,72), U_{311}=(0,72-0,72)/(1,20-0,72), U_{411}=(0,96-0,72)/(1,20-0,72), U_{511}=(1,20-0,72)/(1,20-0,72) (5)

We say that the others utilities had been calculated after the mathematical rule from the formula (4), and the dates are written in the new chart 4.

Table 4..

The decisional chart for the multicriterial problem

Shapes of nature	S_1	S_2	S_3

Criteria of decision	C_1	C_2	C_3	C_1	C_2	C_3	C_1	C_2	C_3
Coeficients of importance	*0,6*	*0,2*	*0,2*	*0,6*	*0,2*	*0,2*	*0,6*	*0,2*	*0,2*
V_1	0,50	1,00	0,00	0,50	1,00	0,00	0,50	1,00	0,00
V_2	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,33	1,00
V_3	0,00	0,50	0,00	0,00	0,50	0,00	0,00	0,67	0,00
V_4	0,50	0,50	0,50	0,50	0,00	0,50	0,50	0,00	0,50
V_5	1,00	0,00	1,00	1,00	0,00	1,00	1,00	0,33	1,00

Stage 3.

For each decisional variant i and in each state of nature h, we calculated the utility synthesis (by multiplyng the importance coeficient given to each criteria):

$u_{Sih} = \sum k_j U_{ijk}$ where: (6)

u_{Sih} –the utility synthesis for each decisional variant i,

and state of nature h

$\sum k_j U_{ijk}$ – a total of all the products between the utilities and the criteria importance coefficients, on every line of the chart.

For example, for the first line, corresponding to variant V_1,

u_{S11}=0,50*0,60+1*0,2+0,0*0,2=0,50 (7)

for the second line, corresponding the variant V_2,

u_{S21}=0,0*0,6+0,0*0,2+1,0*0,2=0,2

For all the others decisional variants V_3,V_4,V_5 in conditions of state nature of S_1, the utility has been calculated and defining a new chart, with the utilities under the conditions of nature S_1 materialization.

Table 5.

The chart having the utilities/ synthesis under the conditions of state of nature S_1

	S1			
	C1	C2	C3	
K	0,6	0,2	0,2	
V1	0,50	1,00	0,00	**0,50**
V2	0,00	0,00	1,00	**0,00**
V3	0,00	0,50	0,00	**0,00**
V4	0,50	0,50	0,50	**0,25**
V5	1,00	0,00	1,00	**1,00**

The same process we used to find out the utilities- synthesis in case of state nature S_2 şi S_3, and we obtain the charts below:

Table 6.

The chart having the utilities/ synthesis under the conditions of state of nature S_2 şi S_3

	S2			
	C1	C2	C3	
K	0,6	0,2	0,2	
V1	0,50	1,00	0,00	0,50
V2	0,00	0,00	1,00	0,00
V3	0,00	0,50	0,00	0,00
V4	0,50	0,00	0,50	0,00
V5	1,00	0,00	1,00	1,00

	S3			
	C1	C2	C3	
K	0,6	0,2	0,2	
V1	0,50	1,00	0,00	0,50
V2	0,00	0,33	1,00	0,33
V3	0,00	0,67	0,00	0,22
V4	0,50	0,00	0,50	0,00
V5	1,00	0,33	1,00	1,00

A synthesis of the results from the table 5.şi 6, is given in table 7, which contains all the utilities specific for each state of nature S_1,S_2,S_3 necessary to solve the multicriterial problem.

Table 7.

The chart with utilities in solving the multicriterial problem

Shapes of nature	S_1	S_2	S_3
Criteria of decision	C_1	C_2	C_3
Coeficients of importance	*0,6*	*0,2*	*0,2*
V_1	0,50	0,50	0,50
V_2	0,20	0,20	0,27
V_3	0,10	0,10	0,13
V_4	0,50	0,40	0,40
V_5	0,80	0,80	0,87

Stage 4.

Basing on the utilities synthesis on table 7, we made another chart that contains on the chart lines the decisional variables and on the columns the state of natures. Transformed this way, the problem can be treated as any problem of unicriterial decision. Due to the condition o0f knowing all the manifestations of natures we can choose the decisional variant with the higher mathematical hope having the formula below:

$V_{opt} = \sum u_{Sih} \cdot p_h$ where (8)

u_{Sih} – the utility-synthesis for each decisional variant *i*, and state of nature *h*

$p_h=p(S_h)$ is the possibility of manifestation of nature *h*

Table 8.

Chart regarding the utilities-synthesis asociated to the decision variables for each state of nature and their hierarchy

Stări ale naturii	S_1 S_2 S_3
	0,40 0,50 0,10

V_1	0,50	0,50	0,50	0,50
V_2	0,20	0,20	0,27	0,21
V_3	0,10	0,10	0,13	0,10
V_4	0,50	0,40	0,40	0,44
V_5	0,80	0,80	0,87	0,81

In the last column, marked with blue, are written the values of mathematical hope for each decisional variant, which are obtainde by aplying the formula (8).

For example,

$V_{opt,1}$= 0,50*0,40+0,50*0,50=0,50*0,10=0,50

…….

$V_{opt,5}$=0,80*0,40+0,80*0,50+0,87*0,10=0,81 (9)

Also, the last column provides a clasification and hierarchy of the variants that candidate to make a decision in relation to criteria and influence coeficients in solving the problem, as it follows:

V_5 teaching at work;

V_1 teaching on-line (at distance);

V_4 teaching through mixt method;

4) V_2 teaching face-to-face in the classroom;

5) V_3 teaching at distance (out of institution).

From studying the values enshrined in the matrix, the maximum value is derived by applying mathematical expectation 0.81 and refers to choosing the optimal decision variable V5 (teaching at the place of work). Of course, the results could be different, another variant that optimal decision, where values were different from those granted in November if the probabilities chosen by the state of nature, levels and factors of influence criteria.

3.Conclusion

The conclusion is that the optimal variant is the variant V_5 teaching in organizing the training course, provided that the definition of the initial assessment occurred aijh experience managers and organizers. This option involves teaching, human resource training in the workplace.

If they change the levels given variant values V_i i = 1, .., 5 on a Likert scale from 1 to 5, in relation to criterion C_j, ie N_i (C_j), the coefficients

kj importance and risk probability p (S_h), MADM method chosen the best option might be different. So it depends on an assessment determination and experience in data interpretation problem managers, organizers of the training course.

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FACTORS WHICH HAVE SHAPED AND INFLUENCED PROCESSES OF GLOBALIZATION, MULTINATIONALIZATION, AND TRADE FLOWS SINCE 1980

Abstract: *Globalization as a notion has been overcirculated in the last decades, not only in academic circles but also it has been integrated in any of the world's languages as a common word. Yet there are still countless debates as to some fundamental questions that refer to the thorough understanding of a world developing under the sign of globalization: what it is? Can it be defined? What are the factors that influence it? And maybe the most interesting, how are these factors influenced by it?*

This essay aims at critically discussing the factors that have shaped and influenced processes of globalization, multinationalization and trade flows since 1980. The three notions are interrelated, as globalization is characterized by three main routes: international trade, foreign direct investment and international cooperative agreements.

The essay will start by trying to define the concept of globalization, seen from different perspectives as to what it entails and when it has begun. The essay will then continue by analyzing the views on the main factors – political, economic, social, technological – that have impacted globalization: of particular importance are the technological revolution and the economic revolution that have taken place in the last decades. The factors presented in this essay are interrelated. Furthermore, they do not simply influence globalization, but are also influenced in return by it. At the same time, the essay will refer to the interdependence of globalization with trade flows and multinational companies.

Key words: *marketing, R&D, innovation*

JEL classification: *F01*

In order to obtain a better understanding of a concept of globalization, it is required to define it and determine when it has begun. This is, however, problematic. On one hand, there is no single universal definition for globalization (Riley, 2006). According to Scholte (2000, in Crane and Matten, 2007), globalization equals with deterritorialization, a progressive disintegration of the importance of territorial grounds for social, economic and political activities, processes and relations. In this sense, globalization is born within the last two decades and is driven by technological and political developments.

According to Crane and Matten (2007) the technological improvements refer to improvements in communication and transport technologies, which render the physical distance between countries virtually unimportant. The political developments refer to abolishing or reducing the importance of national borders. This view on globalization does not consider it to be internationalization, liberalization, universalization or westernization, as these ideas have been put into practise for centuries (Moore and Lewis, 1999 in Crane and Matten, 2007).

Another view on globalization is that it actually exists for a long period of time, and that it has just intensified over the last decades (Riley, 2006). The current wave of globalization would be a third one (the first two having taken place between circa 1870-1930, respectively after the Second World War), characterized by a great increase in the ratio of trade to gross domestic product (GDP) for many countries and also by a sustained increase in capital flows and trade in goods and services between countries, thus making the world economy more interdependent.

On the other hand, the very notion of globalization is disputed, as most of the world's economic activity takes place within the Triad Markets (circa 90 per cent of the world happens between North America, Europe and South-East Asia) (Chortarea and Pelagidis, 2004; World Trade Organization, 2004; both cited in Crane and Matten, 2007). Still, supporters of the idea of globalization identify a major shift in the volumes of trade and activity in the international economic system, leading to an acceptance of the idea of globalization as a

process driven by economic and technological forces, where new forms of order (i.e. markets) replace outdated ones (i.e. national states) (Smyth, 2002).

As globalization is a controversial notion, there are also different theories on what are the factors that have influenced it. According to Langhorne (2001), globalization is a direct result of the advances in technology that have made worldwide communication more accessible, since it was physical barriers in communication that limited the connectedness and cooperation across the world. For instance, 'the death of distance' has facilitated the trade of knowledge via the Internet.

The advances in technology entail falling costs of transportation and communications (FitzRoy, 1998; Wolf, 2005), a phenomenon that is not new (it also characterized the first wave of globalization at the end of the nineteenth century), but is also seen by some researchers as another driver of the globalization process. Inventions such as the container ship, the giant tanker, the airliner, but also radio, television, transcontinental telephony, the satellite and the Internet have lead to a fall in sea transport costs, air freight costs and communication costs (Riley, 2006), thus facilitating global trade, capital, labour and information flows (Wolf, 2005). Moreover, trade liberalisation (diminished obstacles to trade) has been achieved thanks to governments reducing tariff and non-tariff barriers, and to the creation of the World Trade Organization (WTO) in 1995, as successor of the General Agreement on Trade and Tariffs (GATT) (FitzRoy, 1998).

According to FitzRoy (1998) and Wolf (2006), the transport issue plays a less significant role in this wave of globalization than in the first one. Wolf further asserts that the substantial change in this wave of globalization is the reduction of marginal cost of collating and disseminating information to nearly zero. In addition, Wolf claims that the information revolution is only in its beginnings and that it is too soon to evaluate its full implications. This further leads to the dissemination of knowledge as another factor that has shaped and is shaped by globalization (Carr, 2002; Smyth, 2002). In the global market, knowledge is considered to be at the core of economic growth (Smyth, 2002).

With the decline in communication and transportation costs, there was a rise in the globalization of trade and in that of production

(as they are interdependent) (Rodrigue, 2007). The facilitation of trade (resulting in a rise in the scale, volume and efficiency of international trade) is further influenced by integration processes (the emergence of economic blocks, the decrease of tariffs at a global scale) and more flexible and embedded production systems. As a consequence, globalization implies a higher ratio of trade to output (GDP) and an important role of the firm (especially MNEs, but increasingly also SMEs) in trade flows (Dachin, 2006; UC Atlas, 2006).

This relates to the existence of national comparative advantage – another driver of globalization, according to FitzRoy (1998). As each country specializes in supplying what it can best produce (according to its resources), it trades its products internationally (Rodrigue, 2007). Thus, global trade leads to lowered production costs, increased productivity and generation of surpluses.

As previously mentioned, another main driver of globalization is the economic liberalization, which implies integration and deregulation of markets (Wolf, 2006). Corresponding to the previous two waves of globalization, economic liberalization has emerged before in the last two decades of the nineteenth century, as well as after the Second World War and, finally, in the last 25 years (Wolf, 2005). The global liberalization revolution is also connected with the end of the Cold War in 1989, the Fall of Communism in Eastern Europe in 1989 and the collapse of the Soviet Union in 1991 (Wolf, 2006). This has been heralded as a triumph of global capitalism (Langhorne, 2001).

Moreover, the economic liberalization relates to the deregulation and integration of markets (Riley, 2006; Wolf, 2006). The European Union is the oldest and most integrated of the Triad Markets, the economic blocs in which most of the world's economic activity takes place (Fuchs and Koch, 1996). Beside the European Union, the other major trading blocs are NAFTA (in North America), Mercosur (in South America), ASEAN (in Asia), EFTA (in Europe), Andean Community (in South America), CAFTA (in Central America), and Caricom (in Central America and South America). The trading blocs establish their economic policy, trade and investment strategy according to the region, thus trying to preserve regional growth and stability and to protect domestic markets through a regional strategy (Fuchs and Koch, 1996).

As promoter of global deregulation, the WTO has made an important contribution to the globalization process (Finger and Tamiotti, 2002). The WTO is linked with trade agreements that removed tariff and non-tariff barriers, thus facilitating the flow of goods and services. The Uruguay Round (initiated in 1986) initiated the biggest reform of the world's trading system since GATT, and represents the largest trade negotiation in history, with an outcome of substantial reduction in tariffs and a substantial increase in international trade (Rodrigue, 2007). One of the major issues that the Uruguay Round took into consideration was agriculture: the Agreement on Agriculture (in the conclusion of the Uruguay Round) has also helped in encouraging trade flows between countries (Dhar and Dey, 2002).

The deregulation of global financial markets also plays an important role in globalization: as capital controls have ceased to exist in many countries, foreign direct investment is facilitated and the freer flow of money across national borders is encouraged (Riley, 2006).

Wolf (2006) further identifies the incorporation of billions of people into the world economy as another driver for globalization. This refers to the rise and beginning of integration of Eastern and Southern Asian markets, where more than half of the world population lives (Parker, 1996; Wolf, 2006). Rodrigue (2007) identifies the economic development in China and Pacific Asia as the main driver for growth in international transportation in recent years.

The liberal view of globalization links this concept with the increased importance of the firm (Smyth, 2002). Multinational companies have impacted on globalization and have, in turn, been influenced by it. Firstly, the achievement of economies of scale by MNEs is an important factor in the process of globalization. Economies of scale are driven, in turn, by technological changes, innovation and invention (Riley, 2006). Secondly, MNEs have influenced the tax systems in their desire to take advantage of lower labour costs and other favourable factors in foreign countries (Riley, 2006). According to Langhorne (2001), the world is a single entity from the perspective of MNEs when it comes to obtaining supplies, finance and providing them with markets for their products.

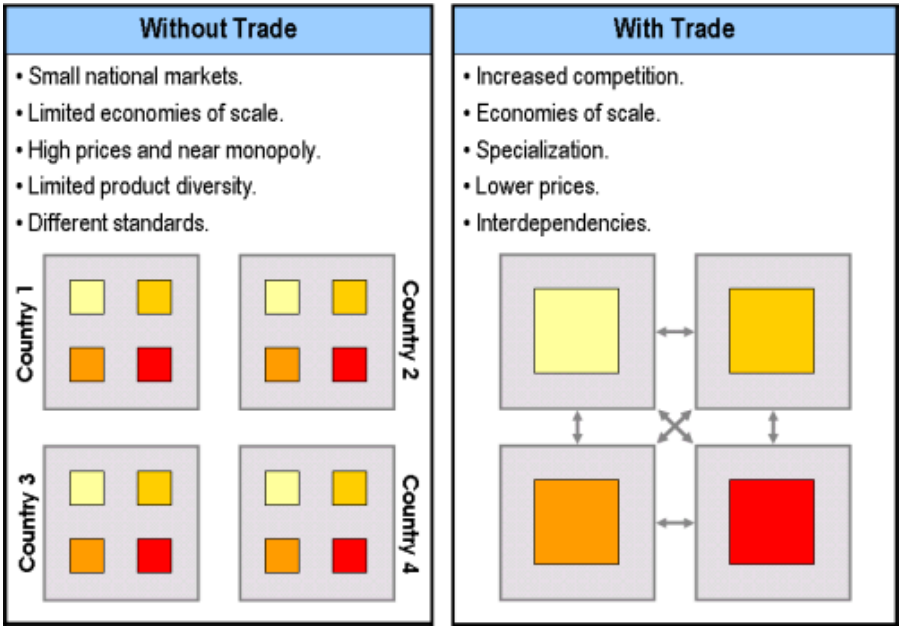
Also, the avoidance of import protection has shaped the process of globalization (Riley, 2006). In other words, the tariff and non-tariff

barriers erected by regional trading blocs are circumvented by many businesses that wish to gain more competitive access to fast-growing economies (e.g. those in emerging markets and in Eastern Europe).

According to Albrow (1996) and FitzRoy (1998), the process of globalization has also been influenced by the increased similarity of customers around the world. In other words, globalization has been shaped by the psychological perception of the world as a single place (Scholte, 1996), where social relations are intensified worldwide by the fact that events from one corner of the world have effects many miles away and vice versa (Giddens, 1990, in Albrow, 1996). Cultural integration thus generates demands for economic integration, which in turn necessitates cultural integration in order to develop markets.

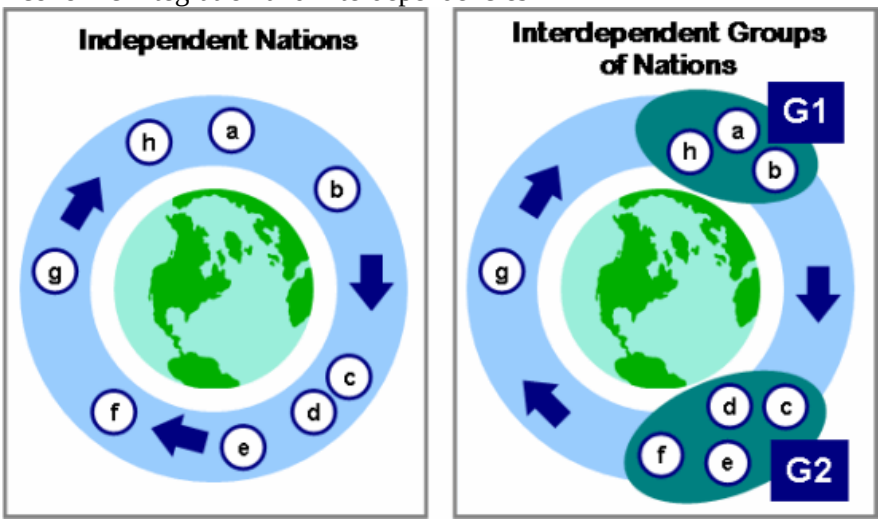
In conclusion, the concept of globalization is hard to define, as it is multifaceted. In order to define the factors that have influenced globalization, trade flows and multinationalization, it is important to consider the boundaries of the global economy and whether globalization is a new concept or whether it is a process that has existed for a long period of time, but has now intensified. Consequently, there are different views on what factors have shaped globalization. However, this essay identifies, according to the research, two main drivers for globalization, namely the technological improvements and the economic developments in the last decades. The other drivers resulting from these two are numerous: the fall of the costs in communication and transport, the integration and deregulation of markets through trade agreements and diminished tariff and non-tariff barriers (all of these resulting in increased trade flows), the role of the multinational enterprises, the achievement of national competitive advantage and economies of scale, the dissemination of knowledge and others. These factors are interconnected and do not count only as drivers of globalization, as they in return are influenced by it, as part of an intensifying process.

Appendix 1
Economic Rationale of Trade



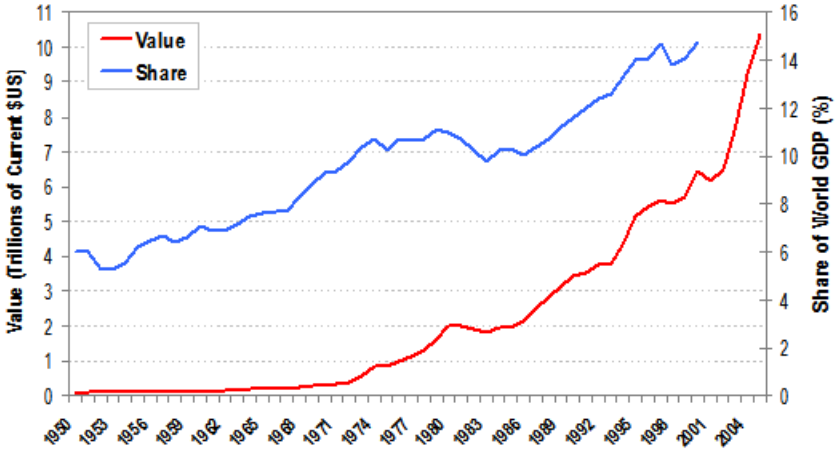
There are numerous benefits resulting from international trade. Without it, economies of scale are harder to achieve in small national markets, hence the prices are higher. With trade, the comparative advantage of each country is explored. Competition increases, and with it also the diversity of goods available in each market, while the prices sink as a result of specialization and economies of scale. The markets become thus interdependent.
Source:
http://people.hofstra.edu/geotrans/eng/ch5en/conc5en/ch5c2en.html

Appendix 2
Economic Integration and Interdependencies



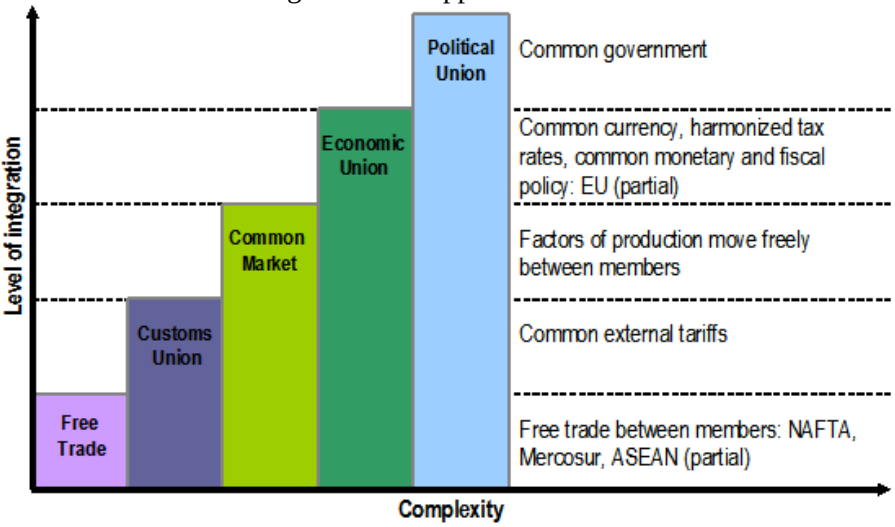
Globalization means deterritorialization: the decreasing importance of geographical boundaries. This is achieved, for instance, through economic integration processes and trade agreements. The markets become interdependent, as comparative advantages are exploited, tariffs are reduced, economies of scale are achieved, consumption markets are expanded and costs are reduced.
Source:
http://people.hofstra.edu/geotrans/eng/ch5en/conc5en/ch5c2en.html

Appendix 3
World Exports of Merchandises, 1950-2005



Source: WTO.
There has been a growth in global trade both in absolute and in relative terms. This has happened particularly after 1995, when developing countries (especially China) started playing an important part in the global scene.
Source:
http://people.hofstra.edu/geotrans/eng/ch5en/conc5en/ch5c2en.html

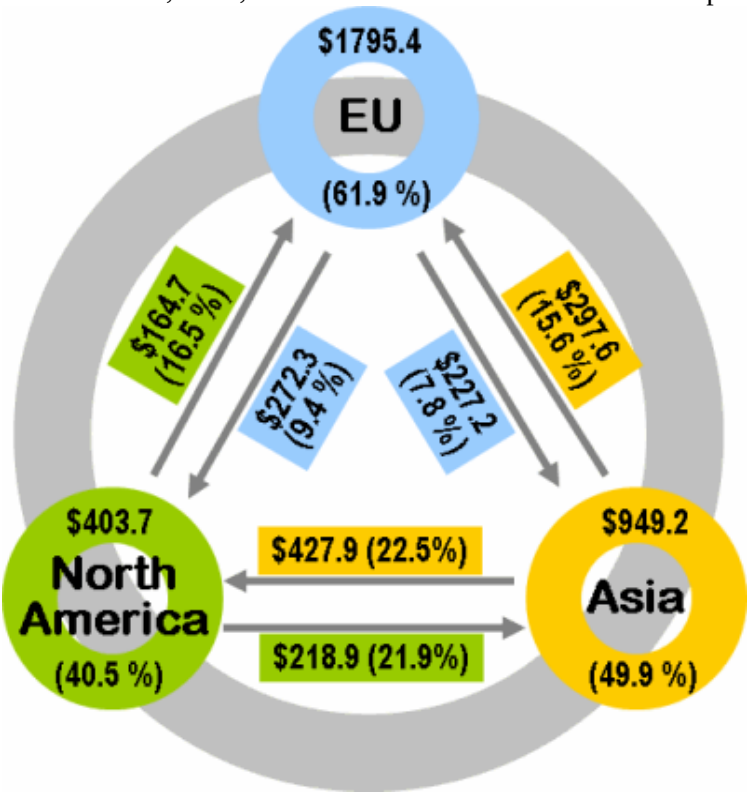
Appendix 4
Levels of Economic Integration - an approximate view



Free trade. Characteristics: significant reduction of tariffs between members; each member sets their own tariffs for trade with non-members.
Custom union. Characteristics: common external tariffs between members.
Common market. Characteristics: free movement of factors of production (such as labour and capital) between members.
Economic union. Characteristics: harmonized monetary and fiscal policies between members, as well as the use of a common currency.
Political union. Characteristics: common government. Potentially the most advanced form of integration
Source:
http://people.hofstra.edu/geotrans/eng/ch5en/conc5en/ch5c2en.html

Source: Abreu, M. (1996), 'Trade in manufactures: the outcome of the Uruguay Round and developing country interests' in Martin, W. and Winters, L. A. (eds.), The Uruguay Round and the Developing Countries, Cambridge University Press, Cambridge.

Appendix 5
Trade between the Triad Markets - International Trade of Merchandises, 2003, in billions of dollars and in % of all exports



Source: WTO
As shown by the figures, most of the world's trade is taking place between the Triad Markets (more than 80% of all exports).
Source:
http://people.hofstra.edu/geotrans/eng/ch5en/conc5en/ch5c2en.html

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Gérard CAZABAT

UNE PROPOSITION D'UN MODÈLE «POST-ADHÉSION» POUR LES «SOURIES» ROUMAINES: L'IPME

Resume*:Pour l'entreprise roumaine, y compris de petite taille, il est indispensable de développer des modèles post-adhésion à l'Union européenne. En revanche, le développement des PME roumaine tournées vers l'international ne doivent pas être uniquement sous traitantes des firmes étrangères. Quel(s) modèle(s) d'organisation de type i-PME serait alors appropriés? Par ailleurs, l'apparition de PME internationales dès leur développement (Born Global Firms en anglais, EIRP en français) est le reflet d'un phénomène de fond pour lequel, en temps de croissance ou de crise, l'internationalisation ne constitue plus un horizon lointain pour les PME, mais incarne plutôt une étape incontournable et nécessaire. Cette contribution vise l'internationalisation des PME roumaines petites et stables, dites « souries ». La présente recherche à propos de l'iPME a pour ambition de considérer les tendances récentes, d'étudier les nouvelles théories, d'analyser les dernières expériences des PME et envisager les meilleures pratiques d'internationalisation. En effet, les difficultés que rencontrent les petites structures en tant qu'entreprises dans leurs stratégies d'internationalisation conduit à s'interroger sur l'évolution des « business model » de ces entreprises, mais aussi sur celle des structures d'organisation et au plan des stratégies à mettre en place à l'international. La distinction entre les configurations organisationnelles de type « born globals », Intrapreneuriales et les autres semblerait nécessaire parce que les problèmes rencontrés ne sont pas les mêmes. Une approche au-delà de l'organisation traditionnelle à travers ses produits et processus pourrait induire la proposition d'un nouveau type.*

Cette proposition d'iPME serait établie à partir d'intersections entre les théories de l'internationalisation et de l'entrepreneuriat international ou l'intrapreneuriat, et une approche terrain de la PME roumaine qui met en évidence la dimension avant tout humaine et non institutionnelle de la PME au-delà des produits et des processus.

Mots clés *: La PME roumaine, Internationalisation de la PME, entrepreneuriat international, Intrapreneuriat, organisation, représentations cognitives.*

Introduction

La place des PME dans le développement économique et de l'emploi est de plus en plus considérée. Dans le cadre de la globalisation, l'internationalisation de la firme, même de taille modeste serait indispensable (LEMAIRE, 2004). Qu'en est-il des PME-PMI roumaines depuis l'ouverture de ce pays de l'ancien bloc soviétique jusqu'à son intégration dans l'Union européenne? Quel modèle pourrait être adapté pour les petites entreprises de ce pays plongé dans un contexte concurrentiel mondialisé? N'y aurait-il pas une opportunité de projeter directement à l'international des « savoir-faire-roumains »?

L'approche classique de l'évolution des firmes à l'international par phases incrémentales a été fondée essentiellement selon le modèle dit d'Uppsala (U-model) (JOHANSON et WIEDERSHEIM-PAUL, 1975) et JOHANSON et VAHLNE, 1977). Puis, un modèle basé sur l'innovation (I – model) a été élaboré par Bilkey et Tésar (1977). Ces théories sont surtout issues de l'observation des grandes entreprises « fordiennes ». D'abord considérées comme des hypofirmes ( ), les PME ont été étudiées plus spécifiquement et notamment au plan de l'internationalisation (CAVUSGIL, 1980 ; RENNIE, 1993 ; ETRILLARD, 2004) mettant en évidence une fusion des phases. En parallèle, l'accélération exponentielle des techniques de la communication a été prise en compte et induirait de nouveaux processus d'internationalisation rapide voire d'emblée (RENNIE, 1993). Ces dynamiques répondraient de façon plus factuelle aux problématiques des entreprises en phase de création, mais aussi des TPE/PME, tant en termes de ressources que de marchés (OVIATT et Mc DOUGALL, 2005). Ce phénomène constaté depuis plus de quinze années, conduit à envisager aujourd'hui, une multiplicité des modes de développement y compris des PME à l'international et à revisiter les

théories classiques de l'internationalisation de façon plus intégrative (BIGLER et NYFFELER, 2006).

Dans le modèle d'innovation (BILKEY et TESAR, 1977), l'internationalisation est perçue comme une innovation pour la firme et le processus d'internationalisation est alors considéré comme la conséquence du lancement d'un produit ou un service nouveau. Notre proposition aurait pour contexte, l'internationalisation d'une PME considérée comme une réorganisation innovante majeure (JULIEN et MARCHESNAY, 1996), mais considérant plus avant que les acteurs des PME avant d'être des figures sont aussi des humains avec des schèmes qui leurs sont propres et qui influent de façon significative l'avancée notamment de l'internalisation au sein d'une PME.

La perspective de cette démarche ne peut donc être limitée aux processus fonctionnels des organisations? En outre, la foultitude de modèles péemmistes oblige, dans le cadre de cette présentation, la définition d'un périmètre focalisé sur un type d'organisation. Nous choisirons pour périmètre les PME dites « souris », petites et stables telles que définies par Filion et al..C'est un parti que nous prendrons face au vaste domaine du monde des PME. En effet, il faudrait sans doute distinguer les PME « classiques » de production de celle de services, ou encore les petites entreprises start-up devenue gazelle mais dont l'esprit entrepreneurial s'étend à l'ensemble des collaborateurs? Quid des entreprises transnationales, etc.?

La perspective de lier l'entrepreneuriat international, via l'intrapreneuriat pourrait sembler intéressante comme alternative aux difficultés internes de l'internationalisation des PME. Toutefois, les limites même de l'intrapreneurait dans les « souries » semblent être avérées (Bouchard, Basso, 2009).

Beaucoup d'études sur les PME restent axées sur une analyse de l'organisation par les produits, les services et les processus. Dans cette organisation péemmiste, le management est de proximité, implicite, voir sensoriel (Tores, 2007). L'entreprise « sourie » se montre souvent peu encline à s'élancer vers la nécessaire internationalisation. Aussi, ne peut-on pas imaginer une action, dans un état d'esprit entrepreneurial, conjointement initiée par le chef d'entreprise et son équipe.

1. Une revisite de la définition de la PME

Avant de traiter des représentations, des figures une revisite de la typologie des PME s'impose, même si l'exposé ne se veut pas exhaustif.

L'ensemble de la communauté des sciences de gestion s'accorde sur ce que le monde péemmiste soit caractérisé par une grande diversité d'organisations. Aussi, nous proposons de limiter, dans un premier temps, notre recherche inductive à une catégorie de PME qui puisse être le plus en rapport avec notre proposition conceptuelle.

Parmi les modèles péemmistes, notre périmètre sera donc focalisé sur un type d'organisation : celui des PME dites « souris », petites et stables telles que définies par David Birch (1983) (in Filion et al., 2007).

La PME dite « sourie » se definie comme étant au départ une TPE qui s'est développée, par une bonne intégration dans le tissu économique et aussi social. Elle est fortement influencée par les valeurs du propriétaire-dirigeant. Les souries ne sont généralement pas dominantes dans leur marché, contrairement aux gazelles qui peuvent le devenir (Filion, 2007). Le dirigeant des souries est surtout un gestionnaire qui a une ou plusieurs compétences dans un domaine particulier.

Parmi les facteurs managériaux communs à toutes les PME, celui du management de proximité semble le plus saillant (Tores, 2007). Proximité hiérarchique, proximité fonctionnelle, processus simplifiés. La stratégie est à court terme et implicite. Le périmètre d'action est souvent évalué en fonction d'une clientèle plus qu'un marché. La proximité spatiale est de mise.

Le style de management va souvent être un mangement implicite sensoriel? (Tores, 2004)

Nombre d'auteurs ont même développé un principe de proxémie applicable à la gestion des PME.

Les conséquences sur leur gestion (julien & Marschesnay, 2004) vont être multiples. La première sera une gestion dite instantanée donnant une flexibilité d'organisation importante. En revanche, le niveau d'innovation va dépendre, au plan du management stratégique,

de l'esprit plus ou moins entrepreneurial du dirigeant, voire sa faculté à partager sa vision e déléguer certaines prérogatives.

Tout reste essentiellement lié au type de dirigeants de PME filion
Conséquences pour la gestion

1.1 L'internationalisation des firmes et le behaviourisme

Les études du développement des grandes firmes (General Motors, etc.) ont conduit à la mise en évidence, entre autres, les mécanismes de l'internationalisation durant leur croissance, en référence à la théorie de la croissance de la firme (PENROSE, 1959). De cet auteur, *The Theory of the Growth of the Firm* constitue à la fois une nouvelle vision de l'entreprise et un passage important à l'attention portée à la relation entre le management stratégique et l'économie organisationnelle. Penrose distingue déjà, les ressources (qu'elle regroupe en deux catégories, matérielles et humaines) des services qu'une entreprise peut en retirer. Elle observe également que certaines firmes n'exploitent pas les possibilités qu'offrent ces interactions, mais que là où elles sont exploitées, la croissance ne peut être attribuable au seul jeu des modifications environnementales. La sélection des couples de produit-marché serait donc conditionnée par les ressources dont la firme a héritées. La seconde contribution importante de Penrose se situe dans ses propositions concernant les compétences parmi lesquelles la connaissance devient un pilier explicatif de la croissance et du développement des organisations.

Cette rationalisation liée aux aspects sociologiques entre l'entreprise et son environnement est la mise en évidence du *behaviourisme*. Le processus d'internationalisation est alors décrit comme un développement séquentiel de différentes étapes. Le mécanisme expliquant l'internationalisation des entreprises a alors pour fondement la théorie behavioriste de la firme (MARCH & SIMON, 1969).

1.2. Les théories des phases devenues classiques: l'U-Model et l'I-Model

Durant les années 1970, la théorie de *l'internationalisation par phases* telle que décrite par Cyert et March, (1963, 1970) aboutit à

travers l'école d'Uppsala au processus incrémental (dit U-Model). Ce modèle auquel les recherches sur le processus d'internationalisation ont fait régulièrement référence, est devenu le modèle « classique » d'internationalisation. Cette théorie de l'école nordique introduite par Johanson et Wiedersheim-Paul (1975) a été développée surtout par Johanson et Vahlne (1977). Le modèle considère le processus d'internationalisation comme un processus linéaire, incrémental et réactif. Dans l'article publié en 1977, « *The internationalization process of the firm – a model of knowledge development and increasing foreign commitments* », Johanson et Vahlne ont incorporé les résultats des études empiriques antérieurs de Johanson et Wiedersheim-Paul (1975) effectués sur 4 entreprises industrielles suédoises (Sandvik, Atlas Copco, Facit et Volvo), pour montrer que l'internationalisation de l'entreprise est le produit d'une série de décisions incrémentales et cumulatives. Ils ont constaté que le processus d'internationalisation des entreprises manufacturières suédoises se fait sur plusieurs étapes. Leur modèle a été définit comme *«Une acquisition graduelle, une intégration et une utilisation des connaissances des opérations et des marchés étrangers et un développement de l'engagement incrémental sur les marchés étrangers»*.

Le modèle d'Uppsala a été fondé sur une hypothèse principale : l'absence et le manque de connaissance sur les marchés étrangers constituent un obstacle important dans le développement international des entreprises. Pour franchir cet obstacle les entreprises vont effectuer tout d'abord des activités sur les marchés étrangers les plus proches psychologiquement pour s'engager, avec l'expérience dans des marchés plus lointains. Les marchés différents selon plusieurs facteurs, tels que la langue, la culture, l'éducation, les pratiques managériales, les systèmes politiques et le développement industriel : la résultante en est «la distance psychique». Johanson et Vahlne (1977) mentionnent l'existence de deux composantes de la connaissance des marchés. L'une facilement transférable entre individus puisqu'elle est acquise par le biais des méthodes standardisées. Ce type d'apprentissage ne réduit pas l'incertitude et elle n'est pas à la base de création de valeur innovante. Ces mêmes auteurs reconnaissent que la distance psychique joue aussi, un rôle important dans le processus d'internationalisation de la firme.

Le U-Model était principalement axé sur l'étude des grandes firmes. Par la suite, plusieurs auteurs de la théorie des phases ont insisté sur l'innovation comme facteur essentiel de l'internationalisation des PME. Un modèle d'innovation a été proposé (I-Model) dont les principaux fondateurs sont Bilkey et Tésar (1977), Cavusgil (1980). Dans ce modèle, l'internationalisation est perçue comme une innovation pour la PME et le processus d'internationalisation est alors considéré comme la conséquence du lancement d'un produit ou d'un service nouveau. En revanche, Andersen (1993) définit les « drivers » à l'export comme étant identifiés différemment, entre les « push » c'est-à-dire que l'internationalisation est provoqué par des agents externes comme un ordre non sollicité ou par l'encouragement des pouvoirs publics ; ce mécanisme est de type réactif. En apposition, pour Cavusgil (1980) ce mécanisme est aussi de type « pull » lorsque sont initialisées les différentes étapes du processus d'internationalisation de façon proactive.

Nous retiendrons de ces réflexions l'importance du niveau de connaissance, de compétence culturelle pouvant compenser la distance psychique et l'intérêt du profil proactif d'un acteur entrepreneurial ainsi, riche en ressources, dans la réussite rapide de l'internationalisation.

2. De l'internationalisation des PME : du réactif au proactif, de la PME a l'I-PME

De façon générale, la pro activité des entreprises et de leurs parties prenantes et les réseaux qu'elles constituent semblent être au centre des derniers développements théoriques de l'internationalisation des PME (Schulz & al, 2009). Ces visions pourraient être dans la veine des travaux d'Ageron et Huault (2002) qui sont une approche par les ressources et les compétences. Cette vision impliquant plus le profil du chef d'entreprise et de son équipe est une perspective d'enrichissement des recherches sur les processus d'internationalisation, en particulier celui de l'approche par les étapes, sans être nécessairement une rupture avec les modèles d'UPPSALA, considérant une telle fusion des phases

que l'aspect incrémental serait situé en amont même de l'établissement ou de l'ajustement du *business model*.

Les principales critiques de l'école behavioriste par Ageron et Huault (2002) ont porté sur l'étude de l'activité au sein des marchés étrangers qui voile un ensemble de composantes internes de l'entreprise. Toujours selon Ageron & Huault, ces composantes, basées sur les ressources et les compétences, servent pourtant de piliers au développement ultérieur sur les marchés internationaux. Cette approche proposée par les auteurs précités permet de s'interroger sur le « comment » et non uniquement sur le « pourquoi » du développement d'une entreprise à l'étranger. Elle redonne une place plus importante au comportement de l'entreprise, des entrepreneurs et de l'organisation entrepreneuriale. Le processus d'internationalisation dépend ainsi, des ressources à la disposition de l'entreprise et de l'exploitation qui en est faite. Le développement international de la PME, dans sa diversité de méthodes, peut, dans ces conditions, être caractérisé par un comportement proactif volontariste et non réactif (Gueguel, 2001).

Sur la base de la même critique des théories classiques, Shulz, Borgoff et Kraus (2009) mettent en avant le rôle prépondérant de la capacité de la petite entreprise à entretenir un réseau dont elle tirera les ressources nécessaire à son internationalisation, mais aussi une part de création de valeur.

Cette réflexion renvoie aussi, à la théorie *« transnational entrepreneurship »* (Chen, 2009), composante nouvelle de l'évolution de la théorie de l'internationalisation des PME par les réseaux interculturels basés sur les multi cultures des équipes internes.

Finalement, s'il est admis que les modèles issus de l'approche incrémentale ont dominé les travaux sur le processus d'internationalisation ces trois dernières décennies, leurs limites ont été aussi mises en évidence et tiennent dans l'insuffisance d'explication des nouvelles formes d'internationalisation des PME et des « born globals » liées à l'entrepreneuriat.

2.1 La nouvelle PME internationale et l'entrepreneuriat international.

Certains auteurs ont proposé des modèles à l'intersection des courants de l'entrepreneuriat et de l'internationalisation remettant donc, en cause la vision processuelle de Johanson et Vahlne (1977), trop

centrée sur l'impact de l'expérience organisationnelle. L'évolution des théories de l'internationalisation des firmes est en fonction de l'évolution rapide de l'environnement des entreprises et de la globalisation des marchés. Le phénomène de la fusion des phases de l'internationalisation des firmes a été constaté depuis plus de quinze années (RENNIE,1993). A partir de l'école d'Uppsala, il est désormais tenu compte des modèles de l'innovation (ANDERSEN, 1993), de celle des réseaux (CHEN, 2009) aux quelles sont associées les théories de l'entrepreneuriat international (Oviatt et McDougall (1994 ;2005). Ces auteurs affirment que le phénomène d'internationalisation n'est pas toujours cohérent avec les caractéristiques traditionnellement attendues des entreprises et leur évolution incrémentales vers l'international. Ils introduisent la notion de "nouvelle entreprise internationale". Selon ces auteurs, quatre éléments sont nécessaires et suffisants pour l'existence d'une NEI:

- la formation d'une organisation à travers l'internalisation de certaines transactions,
- une forte dépendance envers des structures de gouvernance alternatives dans l'accès aux ressources
- l'établissement d'avantages liés à la localisation étrangère
- le contrôle de ressources uniques.

L'international constitue aussi, une dimension de plus en plus présente dans l'expression entrepreneuriale (OVIATT & Mc DOUGALL, 2005) ; la réciproque pourrait être vérifiée. L'évolution des théories de l'internationalisation des firmes et le concept de « nouvelle entreprise internationale » (BACQ et COEURDEROY, 2008) ouvre une voie dans ce sens.

Actuellement, une revue de la littérature fait état d'une revisite des théories classiques de l'internationalisation de façon plus intégrative. Ainsi, Bigler et Nyffeler (2006) ont mis en évidence que la poursuite très tôt d'une opportunité internationale, soutenue par la connaissance culturelle, induirait un comportement entrepreneurial plus important et confèrerait ainsi, un avantage de croissance.

Un rôle crucial est alors, joué par la mise en œuvre des compétences de l'équipe dirigeante dans le processus de croissance de la firme (Bigler et Nyffeler, 2006) aux quelles viendraient s'ajouter les réseaux interculturels de certains membres du management dans un

modèle intégré. L'internationalisation réussie serait alors le fait d'une **équipe entrepreneuriale**.

L'étude du rôle des compétences de l'équipe dirigeante dans la conduite du processus d'internationalisation est d'ailleurs, au cœur d'études comme celles de Pantin (2006). Cet auteur a supposé que l'internationalisation est un processus collectif porté par une équipe dont les compétences permettent la construction de ce processus stratégique. La distinction que propose Pantin (2006) nous semble particulièrement intéressante et a été corroborée par une étude empirique sur plusieurs PME. Il s'agit de distinguer entre compétences essentielles ou nécessaires pour pénétrer un marché étranger (par exemple la connaissance de particularités réglementaires du pays étrangers) et compétences différenciatrices ou centrales qui correspondent selon Pantin à un savoir-faire en action.

2.2. L'intrapreneuriat pour l'internationalisation des PME et ses limites

L'intrapreneuriat s'inscrit dans la même veine que l'entrepreneuriat, dans une dynamique semblable. Récemment formalisé, le processus d'Intrapreneuriat est adopté par certaines entreprises importantes qui trouvent ainsi un moyen de diversification et une nouvelle voie de création de valeur (ZAHRA, 1999, 2002). Basé sur les ressources et les compétences de la firme, l'intrapreneuriat est lié à l'innovation dans les organisations. Ce modèle s'est avéré efficace dans les grandes entreprises. Pour certains auteurs, la quête de l'intrapreneuriat serait même une condition incontournable du succès des firmes (FILION, 1999) ; considérant que seules les *organisations intrapreneuriales* pourront survivre dans un univers de plus en plus concurrentiel.

En outre, le processus par lequel un individu, en association avec une organisation existante, crée une organisation innovante est du domaine de l'intrapreneuriat (SHARMA & CHRISMAN, 1999 in BOUCHARD, 2009). Notre première démarche a donc été d'évaluer dans quelle mesure les conditions de l'intrapreneurait dans les PME seraient favorables à l'internationalisation? Un modèle d'intrapreneuriat international est-il applicable au sein des PME? Nous

nous appuierons à ce stade sur les travaux de Bouchard (2009)[1] . Ce même auteur a mis en évidence la nécessité d'une grande autonomie du « pilote » intrapreneurial et aussi, le risque d'échec d'intégration d'un tel modèle au sein des PME. N'y aurait-il donc pas un autre concept possible, plus souple et permettant une meilleure intégration à terme des projets innovants dans l'entreprise y compris un projet d'internationalisation? Le profil des « acteurs entrepreneuriaux », de l'équipe serait-elle au centre d'une dynamique innovante?

En revanche, ce processus établi sur la base d'infrastructures importantes (dans les grandes entreprises) peut-il-être adapté facilement à la petite entreprise limitée dans ces mêmes ressources?

Plus récemment, les chercheurs ont étendu l'exercice de l'intrapreneuriat aux plus petites organisations ; définissant celui-ci comme un processus qui se produit à l'intérieur d'une firme existante, indépendamment de sa taille et qui ne mène pas uniquement à la création de nouvelles entreprises, mais aussi, au développement de nouveaux produits ou services en vue d'une posture compétitive.

Dans son ouvrage récent, Bouchard (2009) dresse une synthèse des définitions de l'intrapreneuriat à travers la littérature et y inclus les PME. L'auteur en dessine ainsi une évolution qui prend source avec l'intrapreneuring de Pinchot (1985), pour aller vers le corporate entremreneurship de Sharman & Chrisman, (1999), puis l'internal corporate venturing de Mc Millan, (1993). L'intrapreneuriat serait l'application de compétences et d'approches entrepreneuriales au sein de ou par une entreprise existante pour améliorer son fonctionnement interne ou développer ses marchés. Toutes ces études se sont penchées sur l'organisation, mais qu'en est-il du profil de l'intrapreneur? En effet, nous avons relevé plus haut qu'au sein d'une petite organisation, la personnalité même de l'acteur entrepreneurial était déterminante. Cette réflexion prend aussi tout son sens s'agissant d'intrapreneuriat.

Sur ce point les travaux de Basso nous interrogent et nous éclairent [2] . Ainsi, pour cet auteur, le personnage même de l'intrapreneur, l'acteur placé au centre des initiatives, semble avoir été moins étudié. Toujours selon Basso, si le *corporate entrepreneurship* désigne « tout ce qui touche à l'entrepreneuriat dans une entreprise »

(Christensen, 2004), doit-on rapporter ces actions à un ensemble d'employés particuliers que l'on nommerait alors des « intrapreneurs »? La construction possible d'une telle catégorie d'acteurs renvoie immédiatement à la question de son traitement particulier au sein de l'action collective. Devrait-on envisager un mode de management spécifique pour cette classe d'individus? Ce questionnement met en évidence l'aspect contradictoire que revêt le profil d'un manager, d'un gestionnaire maillons d'une organisation et celui si spécifique d'un entrepreneur souvent caractérisé par une capacité à prendre des initiatives de manière indépendante et à exprimer une forte autonomie. Basso lance la question suivante : *« la catégorie des « intrapreneurs » existe-t-elle? Ou cette notion recouvre-t-elle plutôt un ensemble de comportements qualifiés d'entrepreneuriaux qui renvoient à des individus que l'on peut certes particulariser (de par leurs caractères, compétences, etc.) mais en les rapportant toujours à un contexte donné?»*

Les managers des entreprises d'aujourd'hui sont pris dans des organisations dont les structures à géométrie variable contraignent de plus en plus à l'adoption *de facto* de comportements entrepreneuriaux (Basso, 2006). Il ne s'agit pas pour ces acteurs de devenir des intrapreneurs au sens des créateur, mais d'acquérir les vertus prêtées à la dynamique entrepreneuriale en général. Basso conclue en plaçant l'intrapreneur comme un acteur de transition dans l'attente d'une refonte radicale du mode de fonctionnement des organisations.

3. L'évolution de PME en Roumanie des années 1990 à nos jours.

3.1 l'époque d'économie de transition. En 1994, une enquête menée par Korka sur 144 PME roumaine avaient signifié à plus de 62% le rôle de premier plan que jouaient les institutions étatiques dans leurs activités. En revanche, en 1995, une autre étude, le livre blanc de la CRIMM (fondation roumaine pour le développement des PME) indiquait que ce même appareil d'Etat de favorisait que très peu le développement des petites entreprises. A l'inverse des nations plus industrialisées, les pays en transition économique comme la Roumanie ne comptent pas d'organismes officiels efficaces de soutien pour les PME. Dans ces conditions l'internationalisation des PME roumaine à

l'époque se développait comme indiqué dans le tableau suivant établi par Korka.

Modalités de contacts	Proportion des PME
Relations personnelles du dirigeant	46 %
Recommandation d'un associé	22 %
Publications	16 %
Chambres de commerce et d'industrie	8,5 %
Diverses opportunités	7,5 %

Fig 1 : Tableau de KORKA

Par ailleurs, la même étude met en évidence qu'environ 80 % des accords avec des firmes internationales était, au milieu de ces années 1990, du domaine de la représentation et de la sous traitance.

C'est au terme de nombreux aller et retour entre les deux régions qu'est née l'idée de créer, fin 1998, un centre d'affaires franco-roumain, Centrafrom, projet que les autorités de la préfecture comme du judet de Cluj, avec plusieurs industriels locaux conscients des besoins importants en matière d'investissements étrangers, ont fortement soutenu. Le Centrafrom bénéficie ainsi depuis cinq ans du soutien financier du Conseil général de l'Allier et du Conseil régional d'Auvergne, au travers de l'Agence régionale de développement de ce dernier ; chaque collectivité locale contribue, à hauteur de 8 000 euros par an, au budget de fonctionnement de cette structure, financée par ailleurs par les différentes prestations de services qu'elle délivre aux petites et moyennes entreprises françaises, souvent originaires d'Auvergne, intéressées par le marché local roumain.

3.2. Un modèle dit de « coopération européenne » des années 2000. Relaté notamment dans un article de Lhomel (2003) des expériences pour dynamiser le tissu des PME en Roumanie a été établi à travers une coopération à deux axes. Le premier entre des Régions françaises et des régions Roumaines et en parallèle entre firme des deux pays. Ainsi, depuis le nouvel élan économique roumain, un organisme mixte, le « Centrafrom », est devenu le partenaire français local incontournable pour les entreprises des deux pays, aussi pour les principales représentations françaises en Roumanie. Cette dynamique a permis de

doter la région de Cluj-Napoca d'une capacité d'information et d'expertise sur les besoins économiques locaux et sur l'environnement juridique et institutionnel dont les ambiguïtés sont encore considérées par les investisseurs étrangers comme un obstacle important.

Le cas d'Energom-Constructions électriques, cité par Lhomel et créée en 2002, illustre une nouvelle posture. Cette société mixte a été créée, issue de la PME française Peintalmelec (300 salariés et 30 millions d'euros de chiffre d'affaires), plus précisément de son unité de constructions électriques dont le siège est à Vichy et de la société roumaine d'équipements et de distribution électrique Energobit (200 salariés et 11 millions d'euros de chiffre affaires) dont le siège est à Cluj-Napoca. Les deux sociétés ont réaménagé un bâtiment industriel à la périphérie de la ville, au sein d'une zone encore très délabrée, mais promise à restructuration, et réalisé des investissements à hauteur de 300 000 euros pour mettre en place une usine de production dotée d'un atelier de câblage et d'une tôlerie. L'ambition de cette PME de 30 salariés est de s'imposer comme l'un des tout premiers « tableautiers » en Roumanie et de permettre au groupe Peintamelec d'acquérir de nouvelles parts de marché en France et dans les pays de l'Est.

3.3. La PME roumaine et l'internationalisation aujourd'hui. Pour tenter de faire un point factuel, nous relaterons les travaux de Popescu et Tanacescu réalisé en 2007-2008. De toute évidence presque quinze années passées, si le tissu économique roumain a été dynamisé, ses PME seraient encore trop dans la posture de sous traitant d'un autre pays membre de l'Union européenne. Pour preuve, en ce qui concerne la capacité d'innovation, la Roumanie occupe l'avant dernière place en Europe d'après un classement élaboré par la Commission européenne. La perspective d'une évolution favorable pourrait venir de la croissance par l'innovation au sein du secteur des petites et moyennes entreprises (PME). L'article présente les résultats d'une enquête auprès des PME roumaines visant à identifier les déterminants de l'innovation. Ces derniers s'articulent autour de deux groupes de facteurs liés respectivement aux capacités de l'entreprise et aux opportunités de son environnement.

4. Une proposition de modèle i-PME adaptable pour la Roumanie.

Au-delà des considérations uniquement économiques il est a retenir des précédentes études que, outre la coopération active et réciproque des organismes de soutien l'innovation doit être au cœur de l'évolution de la PME roumaine. Notre propos serait alors de proposer un modèle permettant de lier les aspects encore institutionnels des entreprises roumaines, même de petite taille aux enjeux initiés par le marché mondialisé. Ceci implique de considérer de quelle manière la PME roumaine peut s'internationaliser rapidement d'une part et conserver une structure organisationnelle qui tiendrait compte des « coutumes-d'entreprise » roumaines.

Cette proposition s'articule autour de la théorie de l'entrepreneuriat international.

Autre notion mise en avant par Filion, le fait de distinguer nettement l'acte entrepreneurial de l'acte managérial ainsi que de l'acte stratégique. Pour l'auteur, l'entrepreneur qui crée une entreprise joue plusieurs rôles connexes. Le rôle entrepreneurial est celui qui consiste à créer ou à renouveler un système organisationnel qui comprend l'existence d'un bien ou d'un service. Ce rôle sera complété par un ensemble de rôles connexes qui permettent au système entrepreneurial d'exister et de se développer. Parmi ces rôles, les rôles managériaux et stratégiques occupent une place de première ligne. Il importe de bien les circonscrire pour mieux les comprendre et afin de mieux comprendre leurs inter-relations avec les rôles entrepreneuriaux.

Ainsi, nous citerons à tire d'exemple les entreprises telles Microsoft, Google, dont le secteur d'activité particulièrement innovant, il est vrai incite à « l'esprit-entrepreneurial-d'entreprise ». Le type de management (d'avenir) de ces entreprises augure d'un modèle qui pourrait être pris en compte dans l'évolution de la PME roumaine. Ce modèle dans lequel, les cadres innovants ont une influence certaine sur le management permettrait un recul de l'influence du mode institutionnel sur les PME roumaine.

Ainsi, l'enjeu pour la PME et sa direction se situe dans la mobilisation et la coordination des ressources (mêmes contraintes) et des réseaux, permettant de dégager un avantage concurrentiel et non dans sa seule dotation en ressources uniques (BIGLER & NYFFELER, 2006). L'équipe managériale se doit d'explorer et d'exploiter ses

avantages concurrentiels potentiels à savoir ses compétences et ses réseaux internationaux et interculturels.

Suivant cette réflexion, Bigler et Nyffler (2006) ont mis en évidence les compétences clés (stratégiques, opérationnelles et techniques) de l'équipe dirigeante d'une PME suisse. Ces compétences sont déterminantes aux différentes étapes du processus d'internationalisation de la PME.

Ces conditions liées à « l'équipe entrepreneuriale » permettent d'expliquer le passage d'une étape à une autre, l'accélération ou au contraire la stagnation du processus voire même le retour à une étape antérieure. Les auteurs précités notent la complémentarité de l'approche behavioriste (par étapes) et de l'approche par les ressources. Cependant, ils notent aussi que cette dernière ne permet toujours pas de comprendre pourquoi l'entreprise a pu faire l'économie de la première étape? L'approche entrepreneuriale à travers une organisation pourrait comporter un élément de réponse. Quel serait alors le modèle « d'organisation entrepreneuriale » le mieux adapté?

La deuxième étape, considérant l'internationalisation comme une innovation et l'internationalisation d'activités innovantes des PME roumaines, un modèle de type « *born global* » rebaptisé pour la cause « *re-born global* » pourrait être développé.

Dans le même ordre d'idée, Oviatt et Mc Dougall (2005) adoptent quand à eux la dénomination de "born globals", introduite par Rennie (1993) et déjà reprise par Knight et Cavusgil (1996). Les « born-global » sont conduites par un entrepreneur qui adopte une approche internationale, ou même globale, dès la naissance de l'entreprise ou peu de temps après. Leur internationalisation est donc, liée à la personnalité même de « l'acteur entrepreneurial ». Dès lors, comme le concluent Oviatt & Mc Dougall (1994 ;2005), l'histoire du fondateur, son expérience ont une grande influence sur la création de ces nouvelles entreprises internationales. De même, la structure de gouvernance de l'entreprise, par exemple, la composition du conseil d'administration ainsi que l'origine et les réseaux des membres, sont susceptibles de révéler des informations quant à de possibles interconnections avec d'autres firmes (BACQ et COEURDEROY, 2008). Ces mêmes auteurs arrivent à définir le champ du concept de Nouvelles Entreprises Internationales à partir de quatre critères communs :

- l'immédiateté de l'internationalisation,
- une implication non marginale dans des activités internationales,
- une implication organisationnelle,
- un avantage concurrentiel fondé sur l'innovation.

Conclusion

Après avoir identifié les différents concepts d'entrepreneuriat international et revu les descriptions du tissu péemiste proposées par les chercheurs roumains de 1990 à nos jours, nous sommes parvenus à la conclusion que les quatre critères retenus par la littérature et témoignant de la spécificité du concept i-PME rencontrent actuellement l'accord des chercheurs pour l'avancée des PME roumaine dans leur réelle internationalisation, au-delà de la simple sous-traitante. Il s'agit, premièrement, de l'immédiateté de l'internationalisation, deuxièmement d'une implication de la PME dans des activités internationales, troisièmement d'une implication organisationnelle à l'international de type « *re-born global* », et quatrièmement d'un avantage concurrentiel fondé sur l'innovation. Nous l'avons défini comme une PME qui s'internationalise dès sa création, soit maximum cinq ans après sa naissance juridique; qui est alors présente sur divers marchés étrangers et pratique ses activités internationales non par l'intermédiaire d'un étranger. Dans tous les cas, la PME roumaine doit démontrer d'un avantage concurrentiel fondé sur l'innovation. Enfin, le management dit entrepreneurial pourrait constituer une piste de recherche à l'endroit des PME roumaine dans le dépassement de la gouvernance institutionnelle et dans l'optique post adhésion à l'Union européenne de la Roumanie.

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CLIMATE CHANGE IMPACT ON SEASIDE TOURISM. PORTUGAL AND ROMANIA: TWO DIFFERENT CASE STUDIES WITH STRONG PARTICULARITIES

Abstract: *This paper aims to investigate the effects of climate change on the seaside tourism, on the base of two different but interesting case studies namely seaside tourism in Portugal, with is beautiful and very attractive resorts (i.e. Algarve, Madeira, Azores, Estoril, Alentejano) and littoral tourism on the South of Romanian Black Sea Coast also having a chain of tourism resorts (Cap Aurora, Costineşti, Eforie Nord, Eforie Sud, Jupiter, Mamaia, Mangalia, Neptun, Olimp, Saturn, Techirghiol and Venus). Both case studies have strong particularities thus involving specific adaptation and mitigation measures to climate change effects.*[1]

JEL classification: L83, Q 54

Key words: climate change, seaside, tourism, Romania, Portugal, adaptation, mitigation

1. Introduction

Climate change represents the challenge of 21st century that has to be dealt with by the international community which is already taking concerted actions against it. Climate changes are particularly important for tourism sector as they depend not only on average, but also on specific climate characteristics. Climate defines the length and quality of tourism seasons and plays a major role in destination choice and

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tourist spending (UNWTO, UNEP and WMO, 2008). Particularly, in seaside resorts, tourism activity and visitors flows are closely linked with the natural environment.

There is no secret for tourism operators, decision makers, and other tourism stakeholders that climate change will have an increasing impact affecting tourism development and management and that consequently coherent adaptation and mitigation measures will be needed. Still, climate change effects which generally manifested by changes in temperature, rises of sea water level, extreme weather events (hot extremes, heat waves and heavy rain falls) will manifest differently in various regions of the world. In this way tourism destinations will be differently affected, registering both negative and positive effects. Climate change effects will vary and their consequences will depend on the particularities of the territory (often considered at a regional or a national scale) or of the economic sector they stress. So in this context different adaptation and mitigation measures are to be taken at different levels and various approaches (by territory or activity) will be needed so as to contend with this challenge.

It is also important to underline the fact that the relation between climate change and tourism is twofold: climate change impacts on tourism and tourism influencing climate change. The first relation may ask for adaptation measures while the second relation may ask for mitigation measures usually aimed at reducing greenhouse gas (GHG) emissions (Peeters, 2007).

This paper investigates the impact of climate changes on seaside tourism, focusing on two different study cases both belonging to coastal destinations, namely the southern part of the Romanian Black Sea coast and the Portugal coast line. A second part of this study will contain some general considerations on the economic impact of climate changes. The third section will focus on the related literature to the topic of climate change impact on seaside tourism, while in the forth one will contain the authors' investigation for tourism particularities in the two seaside destinations. The impact of climate change on Portugal and Romanian seaside tourism will be analysed in the fifth section. The sixth part of the study will provide adaptation and mitigation measures for seaside tourism being followed by several conclusions.

2. Economic impact of climate changes: general considerations

For economy in general, and especially for tourism, new challenges may appear generated by various factors. Some of those challenges are related to climate changes, tourism resorts being vulnerable to this phenomenon. Tourism demand is influenced by various parameters (i.e. temperature, sunshine duration, snow thickness), the economic results of tourism enterprises being also influenced. The effects of climate changes on nature, society and economy may refer to various issues, such as: damage caused by storm or by fire in wild forests; losses of species and land loss due to sea level rise; impact on water resources, food supplies, human health, and energy costs. According to Roson (2003), there are three main categories of parameters that are affected: *productivity shift parameters* that modify the productivity of a specific factor (land fertility, a reduction of water availability both harming the land productivity); *resource endowments*, land resources are lost due to sea level rise; *structural demand shifts,* changes in demand structure, not induced by relative price changes, more expenditure on health services, forced coastal protection investments, air conditioning systems purchases.

The total impact of climate change is typically estimated as the difference between today's economy with today's climate and today's economy with some future climate (Tol, 2008). The impact of climate changes in the following years refers to various issues such as (IPCC, 2007): *changes in ecosystem structure,* biodiversity loss projected to occur (Australia, New Zealand, Europe, Latin America), mountainous areas with glacier retreat, reduced snow cover and winter tourism (Europe); *crop productivity increase/decrease, depending on latitudes,* by 2020, rain-fed agriculture yields could be reduced by up to 50% (countries in Africa) and by 2030, agriculture and forestry production is projected to decline (Australia and New Zealand); *coastal erosion, due to sea level rise* – towards the end of 21st century, sea level rise will affect low-lying coastal areas and the adaptation cost could amount to at least 5-10% of GDP (Africa); sea level rise is expected to exacerbate coastal hazards, threatening infrastructure, settlements, communities (Small Islands); *the health status of people will be affected,* this being possible through increased diseases and injury due to extreme weather events, etc., but climate change is projected to bring benefits in temperate areas, such as fewer deaths from cold exposure,

etc; *stresses on water resources will be exacerbated* – by 2020, between 75 and 250 mil. of people will be exposed to increased water stress (Africa); by 2030, water security problems are projected to intensify (Australia, New Zealand); by 2050, freshwater availability is projected to decrease (Asia); high temperatures, drought, reduced water availability, hydropower potential, summer tourism and crop productivity (Southern Europe); changes in precipitation patterns and the glaciers disappearance will affect water availability (Latin America). Regarding the economic impact of sea-level rise, relatively poor regions have to spend a higher share of their GDP on protection than richer regions (Deke et al., 2001).

The economic impact may refer to influences of climate changes on countries GDP, on their infrastructure, on prices for some products due to production decrease, etc. Stern Review (2006) estimates that the overall climate change costs and risks will be equivalent to losing at least 5% of global GDP each year if measures are not taken. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more, poorest countries being most vulnerable to climate change. But, the costs of action (reducing GHG emissions) can be limited to around 1% of global GDP each year.

Deschenes and Greenstone (2006) measure the economic impact of climate change on US agricultural land, by estimating the effect of the presumably random year-to-year variation in temperature and precipitation on agricultural profits and the estimates indicate that climate change will lead to a $1.3 billion or 4.0 % increase in annual profits. ECLAC (2010) estimates the economic impact of climate change on nine countries in the Caribbean basin, the cost of climate change to the tourism sector being estimated under three scenarios. The tourism estimated costs for the Caribbean subregion ranges from US$43.9 billion to US$46.3 billion (2007$).

From region to region, the costs of climate change on nature, environment, society, settlements, economy etc. may vary, depending on the level of development, infrastructure and other important characteristics.

3. Related literature on climate change impact on seaside tourism

As the economic systems reflect very sensitively environmental

changes, the relation climate change tourism began to be particularly investigated in the last few years. Climate change – tourism economy relationship preserves however a high degree of randomness coming from multiple stressors which may interfere and by a low degree of predictability due to very dynamic and different types of indicators implied in variable shares in these complex connections, on the one hand, and to the difficulty to establish thresholds in the modelling parameters, on the other hand. Moreover, tourism industry is by its definition a highly dynamic field, sensitive to a great number of external stimuli, climate change being one of them. The degree into which this domain responds to changes induced by the main climate parameters is still highly argued and debated at a worldwide level, and oftenly shows very different cases one from another. In the last few years researchers focused, in the attempt to design patterns for climate-tourism relationship, both on general impact models and methodology (Bigano et al, 2005) and on particular cases oriented to different territories such as: specific countries (Sygna et al, 2004; Gambarelli and Goria, 2004; Hamilton and Tol, 2007; Hein et al, 2009) or destination types especially ski areas or coastal zones (Jennings, 2004; Phillips and Jones, 2006; Buzinde et al, 2010). Eastern European economies started also to be in the recent years a subject of these analyses. Consequently different European projects were dedicated to the study of climate variations and their impact (e.g. CECILIA or CLAVIER). As literature shows the most sensitive tourism areas, responding to climate change influences, seem to be mountain territories especially during winter sport season and coast areas specialized on summer sea tourism. In the case of summer tourism, however the connections within environmental systems seem to be even more complex, as physical phenomena generated by the interaction sea – dry land are also counted as important variables especially through coastal erosion and storm occurrence (most scientists fear a general rise in sea level and an increased incidence in storms) as a main result on the one hand, and as climate changes impact is not evenly distributed along the coastline even within the same geographic region on the other hand. Differences are great also in economic terms as tourism is part of complex economic systems and as different economic sectors often compete for the same resource. Sometimes littoral tourism depends to a great extent on the socio-

economic context and development strategies or rejuvenation policies being difficult to declare to what degree climate could interfere in this equation. Under these circumstances, an overview of the socioeconomic conditions that characterize a region is a premise for understanding local vulnerability to climate change (CLAVIER, 2009). However it is obvious that in the case of sun, sea, sand tourism the success of this economic field depends on climate resources. Nevertheless changes on the main climate parameters would affect it to a certain degree. For Romanian Black Sea coast the linkage was shown in the CLAVIER study which tried to make evident the relationship between tourism performance and climate during the main season (July and August) by appealing to regression analysis, performed using mean air temperature as predictor and the number of overnight stays as controlled variable, on the one hand, and by the study of main socio-economic indicators and economic vulnerability of this region (the degree to which it depends on summer tourism), on the other hand. A previous study analyzing costal erosion impact on Romanian Black Sea summer tourism for Mamaia resort case study was done in 2005 by the National Institute of Research and Development in Tourism. Both studies emphasized the high regional importance of tourism on southern Romanian Black sea littoral clearly displayed by rising shares of hotel and restaurant branch in the county and even by regional production and value added. In order to shape impact assessment for this study case region CLAVIER project appealed to Thom's Discomfort Index (measuring heat stress) calculated according to REMO-A1B scenario whereas for vulnerability assessment appealed to a comparative analysis of Endogenous Regional Adaptive Capacity (ERAC) realized by Cluster methodology at the NUTS III level of the entire CLAVIER area.

4. Seaside tourism development: Past and Perspectives

Coastal areas all over the world are being subjected to high human pressures. The late 20th century witnessed a mass movement of people from hinterlands to coastal areas, a migration that is continuing in the 21st century, leading these areas to develop into major attractions for living and working (Noronha et al., 2002). Besides that, seaside areas are also the main destinations for many holidaymakers.

At the beginning of the second half of the 20th century, many

coastal areas of Spain, Italy, Greece, Portugal to which other south European countries might be added, began to attract tourism flows from northern Europe, motivated by pleasant thermal conditions and sun and sea experiences (Bramwell, 2004). Coastal tourism, a dominant segment of the tourism market, has a seasonal and spatial concentration. Policy-makers have responded to the future economic health of this mass tourism development by greater product diversification through new and large scale products to attract high spending tourists, or through alternative small scale products to adapt to the changing tastes of consumers (Bramwell, 2004).

4.1. The case of Portugal

At the beginning of the 20th century, Portugal discovered the importance of tourism and adopted measures to promote its development. Its natural and climate conditions, the hospitality of its people and the peculiarity of its culture favoured the development of tourism as a structured economic activity. In this period, Portuguese tourism developed around thermal spas, aimed at domestic tourism, and Madeira and Lisbon regions, which mostly attracted foreign tourists (Cunha, 1997).

Coastal tourism first developed around Cascais, a beach area located in the Lisbon region. Later, the widespread scientific belief in the therapeutical benefits of sea and sunbathing helped transforming some small villages into spa resorts (Carvalho, 2010). In 1915, Estoril was turned into Portugal's first coastal resort based on its maritime, climate, thermal and sporting potentialities. There were first-class facilities, a thermal complex and an electrical train connection to Lisbon.

Following the Second World War, the tourism sector developed rapidly, with Lisbon concentrating almost 30% of the accommodation capacity, whilst Algarve and Madeira only represented 5 and 3.3% of the total, respectively (Cunha, 1997). Tourism was, therefore, very concentrated in the Lisbon area, and was highly dependent upon foreign markets.

In mid 1960s, tourism resort areas started to appear in Algarve and Madeira, polarizing the attention and concentrating investment in these regions, leading the traditional tourist centres to lose their preponderance. The construction of the international airports of

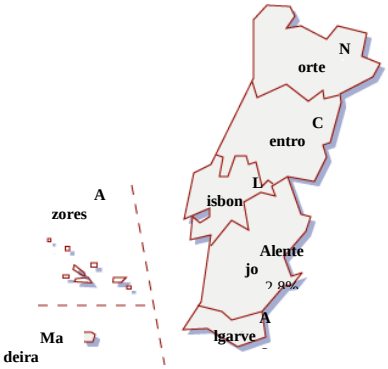
Funchal (Madeira) and Faro (Algarve) allowed the establishment of air connections with the main inbound markets. By then, the accommodation capacity in Algarve started to increase significantly, reaching 16% of the country's total, and Madeira also grew to 9.5%. In parallel, the Lisbon region dropped its share to 27% (Cunha, 1997). Demand, at this time, mostly revolved around sea, sun and sand, with the country taking advantage of its 850 km long coast. Tourism in Portugal was then synonymous of seaside tourism.

The preponderance of Algarve was reinforced throughout the 1980s and 1990s, especially because of the development of second homes and tourism real estate. Between 1979 and 1987, hotel capacity in Algarve rose from 5 to 25 thousand beds, plus an estimated 150-180 thousand beds in the informal sector (Cunha, 1997). In the 1990s, Algarve concentrated 40% of the tourism supply and, jointly with the Lisbon area, it absorbed 70% of all foreign bed nights. The main motivations were sun and sea-related.

Algarve established itself as the main area where seaside tourism is dominant, because of its warm climate and big extension of white sandy beaches, many of which were awarded a Blue Flag. In the Lisbon area there are many well known tourism centres, including Estoril. For its all year round warm weather and therapeutic properties of the sand, the beaches in Madeira (especially Porto Santo) are also important destinations.

Today, the tourism sector in Portugal is very dependent upon the performance of these three main regions, which accounts for approximately 74% of total bed nights in hotels (Figure 1). These three main tourist destinations concentrate the majority of bed nights, in part, because of the high concentration of tourist facilities and because these regions are sun-sea-sand oriented. The concentration of hotels along the coast reveals the dependency on this type of tourism (Vaz and Dinis, 2007), especially in the Algarve, which has become, throughout the years, the largest Portuguese destination, both for domestic and foreign markets.

Despite the concentration tourism establishments on coastal areas and their small number in the hinterland, considerable average annual growth rates have been throughout most of the interior regions. This may be viewed either as a sign of saturation of certain traditional destinations or changes in tourist motivations.



Source: TP, 2009a and 2009b

Fig. 1 Total bed nights by region, 2008

In 2005, a ten-year tourism strategy was launched in order to increase the tourism contribution to GDP, to enhance qualified employment and to boost domestic tourism (MEI, 2006). The National Tourism Strategic Plan (2005–2015) was designed to put into practice these targets, around the development of new regional clusters (Alqueva, Litoral Alentejano, Oeste, Douro, Serra da Estrela, Porto Santo and Azores), aiming to expand the tourism activity to the entire country and thus to reduce the concentration on the three main regions and on the sun and sea product. The strategy aimed the enhancement of other key tourist products which were selected because of their attractiveness and strategic interest. Although sea and sun tourism is already fully developed in the country, it was also included in the list of key products, but with the aim to target the upscale market, for which the country already attracts 2.3% of the total European market, holding the 8th position (THR, 2006).

4.2. The case of Romania

The Black Sea coast, with its natural resources and cultural heritage, presents a number of particularities, and was transformed in an essential component of Romanian tourism industry along the past decades. The area stretches for 153 miles with the lower 45 miles developed into a string of beach resorts and health spas catering to all ages and interests. Romanian seaside displays important tourism

resources due to the salt sea water with reinforcement properties for the body, marine bioclimatic and mineralized waters, salt lakes, therapeutic mud. The marine bio-climate has particular characteristics such as moderate temperatures, considerable thermo stability, reduced precipitations, an important number of sunny days (140 days/year), beautiful eastward orientation, uniformity of the humidity level, having an excellent effect on the body. Spa resources, especially mineral or mineralized waters and therapeutic mud, ensure the necessary elements for a complex treatment (prophylactic, therapeutic, recovering) enhancing the attractiveness and value of the seaside tourism potential.

The forms of tourism which can be developed on the Black Sea coast are various and very attractive for all type of tourists: *recreational (sun and beach) tourism, health (wellness, balneal, treatment) tourism*, *business tourism* encouraged by the presence of various meeting centres, *active tourism* supported by the presence of the sea and lakes, where visitors can practice different water sports, and recreational parks, *equestrian tourism*, *itinerary and cultural tourism due to* its heritage (Histria, Tomis, Callatis and others antiques ruins, monasteries and architectural monuments, various nationalities (Russian–Lipovenians, Turks, Tatars, Ukrainians, Greeks), *gastronomic and wine tourism*; *week end tourism,* developed because of the closeness to important urban centres.

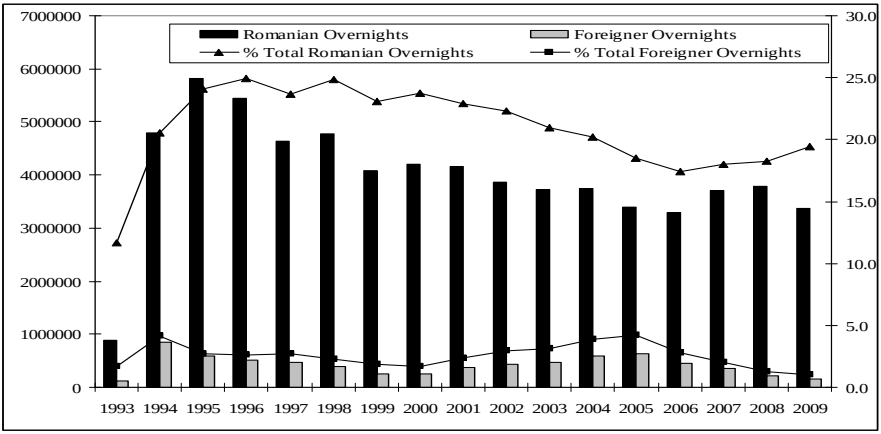
The oldest resorts on the Black Sea are Mamaia, Mangalia, Eforie Nord, Eforie Sud developed in the early 1900s. Beside those resorts, in the communist period new summer resorts were developed, their names being inspired by antique mythology Olimp, Neptun, Jupiter, Aurora, Saturn. The hotels architectural conception was a novelty at that moment. The result consisted in giant accommodation units with small common spaces, without recreational spaces but also in constructions which answer to the demands of most tourists, having enough elements of comfort and functionality.

On the Romanian Black Sea coast there are eleven tourist resorts of national interest (according to the Governmental Decision No. 852/2008 for the approval of the conditions and procedure to certificate the tourist resorts published in the Official Gazette 613/2008): Cap Aurora, Costineşti, Eforie Nord, Eforie Sud, Jupiter, Mamaia, Mangalia, Neptun, Olimp, Saturn, Techirghiol and Venus.

Based on the density of hotels and guest capacity, the seaside

area contains the greatest concentration of accommodation units in Romania, with over 110 thousand bed-places, hosting annually around 788 thousand tourists. As it regards the accommodation capacity, the bed-places' number decreased by 0.7% in between 1994-2009. Still, an important accommodation capacity is located on the seaside resorts, in 2009 their number reaching 118,835 bed-places, representing around 39.3% of all bed-places in Romania. The establishments were built to accommodate large number of visitors and this Romanian tourism destination used to be highly demanded especially by Scandinavian tourists.

The decrease in tourism demand was more pronounced, for both Romanian and foreign tourists especially after 1998. In 2009 the total number of overnight stays was 3,517,860 tourist-days of which just 4.2% of the foreigners. The overnight stays in seaside resorts represented 19.4% in the total number of Romanian overnights stays in the country, and 1% in the total number of foreigner overnight stays (see Fig. 2).



***Source*:** Processed data from the National Institute of Statistics

Fig. 2 The evolution of overnight stays in seaside resorts

The poor image of Romania abroad did not sustain tourism activity, affecting the trust of foreign tourists in Romanian destinations. The lack of promotion for seaside tourism resources, the bad external image of Romania, unsecure economic environment and incoherent tourism policies determined the decrease in the number of foreign arrivals. At the same time, the low incomes of residents affected tourist

flows whereas Romanians gave up in spending their vacation on internal destinations of the seaside.

Tourism activity in Romania confronted with other difficulties especially related to the absence of an overall tourism policy to orient and manage the sector. The problems of the Romanian tourism sector were diverse: the lack of interest of governmental structures in sustaining this activity, the fiscal policy, the low level of investments, the absence of partnerships, low investments in labour force training, low quality of the services not correlated with prices, the lack of interest of the local authorities in this domain. Consequently important tour operators like TUI and Neckerman lost interest in the Romanian seaside.

The privatisation process was finished very late and mostly in an inappropriate way with negative effects on the efficiency of tourism activity, determining an inadequate valorisation of tourism potential, its insufficient development and promotion on the foreign market. Due to the fact that tourism activity in the Black Sea resorts is characterized by seasonality, investors were not very interested in this location either. Consequently tourism establishments suffered from degradation and lost field in front of the modern and more efficient establishments in other parts of the country or from abroad. The intense competition of other neighbouring countries (Turkey, Bulgaria, and Greece) with a longer summer season and offering good service at competitive prices determine not only the foreigners, but also Romanians to abandon autochthonous seaside tourism destinations. The freedom of travelling gained after 1989 and after entering EU was another factor which encouraged Romanians to leave decadent traditional local destinations.

5. Impact of climate change on seaside tourism

In the specialists' opinion tourism activity in the seaside areas is particularly vulnerable to climate change effects. In some regions, a diminution in the tourism demand has been already registered while other regions on the contrary might register an increase. Climate changes and their wide range of effects upon beaches, ecosystems, heritage or human health will sooner or latter affect tourism demand. Coastal resorts respond more favourably to summer temperature increases than inland resorts (Bigano et al, 2005). The climate parameters (temperature, precipitations, lasting brilliance of the sun)

have a strong effect on the tourist preferences for a seaside resort.

5.1. Potential implications for Portugal seaside tourism

The most important effects of global warming include significant coastal erosion, an increased frequency of extreme weather events (such as prolonged droughts or sudden floods), a reduction of rainfall (between 30 and 40%) and an increase of the average temperature. All these factors have a significant impact, both in coastal areas, as well as in inland areas and southern regions, which will suffer from significant reductions in rainfall.

One of the effects is related to the season length, which will become much more evenly distributed across Europe (Amelung and Moreno, 2009). The dominant trend in southern Europe is a decrease during summer, whereas in northern Europe there will be an increase in summer, spring and autumn. Interestingly, Portugal is projected to maintain or even increase its current season length.

Portugal has a long coastline of approximately 2.830 km, with a wide variety of configurations (sandy beaches and dunes, high cliffs and low-lying rocky shores). One of the effects of climate change is the rise of the sea level, which will inevitably cause flooding, coastal erosion and the loss of flat coastal regions (it is estimated an increase of 15 to 25% on the average erosion rate during the 21st century). Higher flood risk increases the threat of loss of life and property, as well as of damage to infrastructure, and might lead to an increasing loss of tourism, recreation and transportation functions (Watkiss et al, 2005). The rising sea level also increases the likelihood of storm surges, landward intrusion of salt water in estuaries and coastal aquifers, and endangers coastal ecosystems and wetlands.

The SIAM project indicates particularly negative effects on water resources in coastal areas, especially in the south of Portugal. The future climate scenarios clearly indicate that heat waves will become more frequent in the future, with serious consequences in various socio-economic sectors and biophysical systems. The risk of forest fires will also increase until the end of the century in Portugal. This will clearly have an impact in one of the most important sectors of the national economy: tourism.

For instance, the main negative impacts of climate change on tourism in Madeira are related with the influence of climate on factors

such as thermal comfort of visitors, the risk of transmission of infectious diseases and the risk of natural disasters (Santos, 2007). Other impacts, such as the degradation of air quality and water resources or the loss of natural beauty, does not seem to have the same vulnerability to climate change (i.e., in terms of tourism attractiveness). These changes may alter the distribution profile of the main markets for the region. Increases in the risk of transmission of tropical infectious diseases may have an extremely negative effect on the region's image as a tourist destination.

In Cascais, in the Lisbon area, climate change may increase the number of favourable months for beach tourism. However, towards the end of the century, two scenarios indicate that July and August will be probably less suitable for beach tourism and possibly a change in the seasonal pattern of demand (two peak seasons instead of one) may occur (Casimiro et al, 2007). Beach erosion and rising sea level are also estimated impacts, which lead to a reduction of the beach usable area.

The impact of climate change in other important tourism products of the region was also assessed. Regarding golf, it was estimated a reduction in the number of days suitable for golfing.

Environmental conditions will favour the growth and survival of bacteria and other harmful organisms. There may occur several situations that may jeopardize the health and comfort of tourists caused by food and water-borne diseases. The occurrence of warmer temperatures will also increase the risk of salmonella and other bacterial infections. Warmer temperatures, combined with the increase in extreme precipitation events, will increase the risk of microbial contamination in the sand and water of the Estoril coast. There is also evidence that points to an increase in the risk of algal blooms and, consequently, to an accumulation of biotoxins in bivalves and an increase of the risk of jellyfish in the coastal zone.

Beach erosion is a common impact of climate change to several seaside destinations, being estimated that 67 % of the Portuguese coast is at risk of erosion during the next decades. The Algarve coast is one of the most vulnerable areas (DPPRI, 2009). In Algarve it is also anticipated a reduction in the number of days with comfortable levels of heat stress (April, May and October will concentrate 50% of these days); an increase in the number of days with more intense heat waves; and a reduction in the number of days of cold stress. This may have an

impact on tourism demand, especially for golfers and resorts users.

This means that the Algarve region will be more attractive during spring and autumn, but tourists may be somehow threatened by the risk of contracting diseases. Indeed, climate change is likely to enhance the existence of more favourable conditions for the transmission of infectious diseases during spring and autumn, particularly the West Nile Fever, Leishmaniasis and Escaro Nodular Fever, although, in the latter case, the risk is already high during the summer months. In the case of malaria, it is projected an increase in the number of days favourable for the survival of the mosquitoes, although the risk of the disease transmission is low.

5.2. Potential implications for Romanian seaside tourism

Romanian seaside represents an important tourist destination, and at the same time, a major source of income. Seaside areas are very sensitive to change and climate change and in consequence the tourism activity in these areas is very likely to be influenced in many ways, some effects could be positive, some others negative.

Climate change strongly influences seaside tourism through phenomena such as sea level rise, threatening coastal areas by coastal erosion and floods, increased frequency of extreme weather events (e.g. heavy rains, heat waves, storms), reduction of water reserves. Meteorological conditions have a strong influence on tourist flows directed towards coast areas. Parameters as air temperature, precipitations, wind, sunny hours influence tourists decision in spending their time on the Black Sea coast, especially the duration and frequency of their staying and their behaviour.

The precipitations will be reduced during summer season. Climate scenarios indicate an increase in temperature in the winter season with 2ºC and in the summer season, more pronounced, with 4.3ºC in the south part of Romania. These climate change influences can no longer be neglected especially as they concern tourism activity.

In the last ten years, between 2000-2010, these phenomena were more pronounced on Romanian Black Sea coast. In September 2005, strong floods were registered on the Black Sea coast, over passing the flood and hazard rates, resulting in significant economic and social losses. Short duration rainfalls of increasing intensity extended the damages and had a strong effect on tourism activity, Costinesti resort

being particularly affected. At the same time, due to these climatic phenomena, Romanian and also foreign tourists cancelled their vacation to the seaside. The period of short rainfalls from July to September felled the tourists' number travelling in the areas affected by floods.

The multi-annual temperature in the study area is around 11.2^0C. Generally, the 2002-2007 interval concentrated very warm years (e.g. 13ºC annual average in 2007) and only one normal year, 2003 (2003/11.1ºC). During the year, the maximum values are reached during the peak tourist season, July and August (July-August 21.6-21.8ºC). In the Black Sea coast, the amount of precipitation in 2005 was about 800 mm. The lowest amount registered in 2004, during the same months, this year having a moderate-dry character as referred to the whole country and study-area (394.4 mm) (CLAVIER, 2009).

Global warming affects the concentration of oxygen in sea water, becoming insufficient to insure the life of plants and animals, in the summer of 2010 hundreds of dead fishes being found along the beaches in Constanta, Mamaia, Navodari brought by waves. This phenomenon affected negatively tourist stays, creating an obvious discomfort. The increase in sea water temperature also generates the increase in the quantity of algae. Annually, disappointed by the smell and dirty water, tourists left the beaches.

People leaving from agglomerated cities to escape from the hot days and pollution went to seaside, mountain resorts or rural areas to feel the breeze and milder temperatures. The hot summer in 2007 and in 2010 registered an increase in tourism flows. The increasing temperatures of their destination determined tourists to change their travel options. Thus, hot summers like the one in 2007 may urge domestic tourists, especially from great urban areas in South-East of Romania (including the capital of Bucharest) to make frequent trips on the Black Sea coast. Meanwhile, global warming causes tourists to travel to coastal areas also during off-season (e.g. warmer winters like the one in 2006-2007). Surugiu and Surugiu (2009) concluded in a study that, in every summer season, seaside tourism should register economic gains due to increase in air temperature, but beyond a certain thermal threshold, the discomfort occurs and tourists give up travelling, the plus in the demand being cancelled. On the other hand, the seaside resorts are strongly influenced by seasonality exacerbating the climate

change negative effects, like those in the water regimes during dry seasons, aggravating water management and environmental issues. Still, warmer autumns and winters might extend tourist season, determining some extra positive effects through job creation, increase in tourism incomes, reducing the extra pressure in the peak season.

The phenomenon of coastal erosion, particularly reported in recent decades has become an almost general phenomenon for the Romanian coast, resulting in reduction of beach areas. In the last decade, the balance between intake and loss of sedimentary material was negative. According to "Grigore Antipa" National Institute for Marine Research and Development, in the Eforie – Vama Veche coastal sector, the average annual change in the shoreline was -1.9m/year with variations between 4.8 m/year (Mangalia) and -8.6 m/year (Vama Veche). The report erosion/accretion on the shoreline length studied as an indicator for the coastal zone was 0.50 for the period 2001-2006, compared to the interval 2006-2007, when the erosion was zero. An increased water level of the Black Sea could generate not only the erosion of beaches, but also destroying ecosystems or flooding coastal areas having historical heritage and other important tourist attractions.

6. Adaptation and mitigation measures

Mitigation and adaptation are both mentioned as important variables of a strategy meant to reduce climate change impact on economic systems in general and on tourism in particular. Adaptation seems to be however the most suitable variant nowadays as mitigation would impose another unknown variable and as climate change scenarios are widely accepted certifying an already existing phenomenon. Climate variability is a reality in place which affects sun sea tourism in different parts of the world imposing already measures to adapt. Consequently, the crucial role of adaptation in assessing climate change's impacts is widely recognized (Gambarelli and Gloria, 2004).

Adaptation, is widely quoted by scientific literature (Smit et al, 2000; Gambarelli and Gloria, 2004; O'Brien et al., 2004; CLAVIER) as the final variable of economic vulnerability to climate change factor. Adaptation supposes system adjustment to climate change, its power to adapt depending on the strength of external stimuli (the dimension of

exposure) and on the external sensitivity towards the changing factor as well as of its endogenous capacity to adapt (coming from its internal sensitivity and the capacity to cope the impact induced by environmental factors).

One of the most quoted measures of tourism adaptation to climate changes would be the orientation towards its less dependent forms on climate so to less vulnerable forms to changes in the natural stimulus. Compared to other types of tourism, littoral industry is highly seasonal and implies a high volume of tourism demand developing appropriate accommodation units and receiving structures.

There are three main categories of adaptation strategies for coastal areas: 'protect', 'accommodate' and 'retreat' (Mather et al, 2005). Some measures include: *Building of sea defences and breakwaters; Enhancement and preservation of natural defences; Adapting the changed conditions by building tourism infrastructure and resorts further back from the coast; Importing sand to beaches in order to maintain their amenity value; Dealing with degradation of coral reefs; Implementing technologies for water and energy conservation; Public/private partnerships; Innovative environmental management practices; Working with communities to tackle environmental issues and engaging tourists.*

Portugal does not have a national adaptation plan yet. Nevertheless, the impacts of climatic changes will hit locally and regionally in different ways. The majority of adaptation actions, therefore, will need to be decided and to be undertaken at the different geographical levels: local, regional and national. There is, however, no effective regional and municipal practice of developing mitigation and adaptation measures and identifying a number of priorities to develop in the short and medium terms, including the development of regional and local plans for climate change.

There are a few exceptions at the local level though. One example is the municipality of Cascais, a well known seaside destination, which adopted a strategic plan for climate change in tourism and mitigation and adaptation plans. The adaptation measures were divided in three groups: natural seasonality of the demand; satisfaction of tourists; and tourism products. Some examples of these measures include the increased use of air conditioners, the development of information programs aimed at the general public and tourists, as

well as tourism officials in order to create awareness on the issues related to heat stress and on how to avoid complications due to extreme situations (e.g. staying in the shade and drink plenty of liquids).

Depending almost entirely on climate resources mass sea sand tourism has fewer possibilities to adapt in the case when other important natural or human resources (seaside respectively cultural attractions) lack in the nearby areas which is to a great extent the case of Romanian Black Sea littoral. Due to its scale, even if it finally manages to adapt, the economic figures would be diminished for the new "adapted" forms of tourism, due to an inevitable decreasing in arrivals and average stay period (lower in the case of other types of tourism). The way in which the existing tourism structures would be integrated in the future tourism development in the area is also an arguable aspect. A solution to cope with seasonality and maybe another variant to focus other forms of tourism less dependent on climate, even during summer season, would be in the case of Romanian littoral business tourism. However this would be a solution for more expensive resorts (ex.: the north part of Mamaia) and high comfort units (four or five star hotels) which are already hosting meetings and events, succeeding not to close during winter season. They could be also tempted to appeal to this form of tourism in order to complete revenues during summer tourism seasons. Adaptation costs would be very different from one accommodation to another and among different resorts, depending also very much on their internal specific resources and on their long marketing strategies to orient towards other forms of tourism. Another solution to cope climate changes for our summer tourism could be also an increased accessibility towards Danube Delta and the cooperation between investors in the two different parts of littoral for creating mixed tourism packages. The task to find solutions to protect tourists and to make them stay during a warmer, a drier or a stormy weather on littoral resorts would be a challenge for every stakeholder to assume in the future as Romanian Black Sea tourism resorts are obliged through their nature (at least by their geographic settlement) to depend on sun and sea tourism. Beside the relation climate – tourism industry sectoral adaptation of summer tourism itself is definitely dependent on the level of development and prosperity of this economic domain and it is obvious in the case of the Romanian Black Sea Coast that its adaptive capacity would increase through

sustainable (long-term) investments in this industry (CLAVIER, 2009). Climate change effects on littoral tourism is a problem to be further on included in the local, regional and national strategy in Romania as until the present moment insufficient steps were made towards this direction.

7. Final remarks and conclusions

The extent to which the society will be influenced by climate changes refers to the adaptive capacity of each country. The variation of total economic costs of climate changes depend on measures adopted by society and economy, both by public and private spheres to cope their effects, and also on the adaptive capacity at the national, regional, local and social level.

Climate changes are likely to affect prices of goods determining various economic consequences, and forcing decision makers to mobilize in order to take necessary measures, to cope these effects. Tourism should be supported, by taking direct actions and also indirectly by protecting the natural, cultural and human capital as some of its most valuable resources.

Both Portugal and Romanian coast lines are sensitive to climate change, adaptive measures being needed so as to cope climate effects, to sustain the development of tourism activity on the seaside areas and ultimately to protect developing economies and to reduce negative social effects (i.e. job losses, incomes decreases). Climate changes will inevitably have a great impact on the tourism sector, given that it is highly dependent on climate resources and due to the important share of sea and sun tourism on the profile market.

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MONETARY POLICY DESIGN IN ACCORDANCE WITH THE OBJECTIVES OF ECONOMIC POLICY

Abstract: *The "Revised St. Louis" model allows analysis and forecasting of the following fundamental economic evolutions: the nominal GDP evolution, the general price evolution, the real GDP and the employment rate evolution, all of these as a consequence of certain changes in the monetary supply and the budget expenses at a potential given by the production, corresponding to a full employment rate. In order to elucidate the state and evolution of the Romanian economy main macroeconomic factors in the last 10 years we have resorted to the "Revised St. Louis" model.*

Keywords*: monetary policy design, gross domestic product, market interest rate, correlation, unemployment rate.*

JEL: *E 17, E 47, E 61,*

Perhaps none of the economic problems not so much concerned economists, mathematicians and politicians that the issue of economic growth and sustainability. That is, we believe, due to the major impact that economy growth has over the entire country's population, which made the reaching or maintaining of a sustained growth rate a major objective of any nation's macroeconomic policy.

Positive economic theory provides methods and tools which examines how the economy evolved in the past and predict how it will evolve in the future.

Normative economic theory provides value judgments about economic phenomena and processes. The economic analysis uses as a starting point data and economic models.

Obtaining a valid model for economic realities, especially for the macro ones, isn't an easy task. This is because people do not always behave rationally, seeking only profit, maximizing utility or cost reduction. In order to check the validity of developed models, we need to use economic data and to highlight also the most important influences. In this context it is possible to track and record changes in economic variables involved in the model without intervening decisively in their evolution or to keep certain variables constant.

We will further present three modeling equations, which were constructed and used for the practical needs of economic analysis and forecasting in countries with developed market economy and, in our opinion, can be used as a methodological support to build the model that we propose for Romania.

These equations are taken from the St. Louis reviewed model.

First consider the theoretical model underlying the development was the modern theory of the money supply. The emphasis put on the quantity's theory is on the behavior of the economic units, as a response to changes in the stock of money.

The money are an element which provides services to its holder the same as all other assets. Moreover, the existing stock of money must be held by someone. As a result, a change in the stock of money will induce a discrepancy between the current and prospective money's holders that will cause the alternation of property portfolio. Included in this adjustment is a change in spending on goods and services.

The underlying assumption of the model is that evolution of nominal national income depends on the evolution of money supply and public spending. In other words, changes in national income depends on monetary and fiscal policy. The merit of this model is that it provides information on developments in the basic macroeconomic variables in various ways of combining monetary policy and financial measures, which enables the ***design of monetary policy in line with the overall objectives of economic policy in terms of income national employment and labor prices***.

The aim of this paper is to present, with an economic model, the optimal formulation of economic policy and political variables that might affect economic outcomes.

Mathematical model

The next chapter describes the revised St. Louis model equations. They were developed under Federal Reserve Bank from St. Louis, US, and represent a model which allow the analyze and forecast for the following fundamental economic trends:

- developments in nominal national income;
- developments in the general price level;
- development of real national income;
- evolution of the labor employment.

However following a certain change in money supply and a certain change in budgetary expenditures, given been the potential production and full employment for labor.

The theoretical base of the model is the quantitative theory reformulated, whose main thesis is that the evolution of national income and prices depends on money supply evolution. The underlying assumption of the model is that the nominal national income evolution depends on the money supply spending evolution. In other words, the national income evolution depends on the fiscal and monetary policy. The merit of this model is that it provides information on developments in the basic macroeconomic variables in various ways of combining monetary policy and financial measures, which enables the design of monetary policy in line with the overall objectives of economic policy in terms of income national employment and labor prices.

The "St. Louis Revisited" is used mainly for "simulation" ways of combining various measures of monetary policy. As is known, the simulation consists of two phases: first phase results in calculating the numerical magnitudes of the endogenous variables (growth of national income, prices, etc..) sizes based on the observed exogenous variables (money supply growth) and the second phase consists of recalculating exogenous variable sizes according to certain data values of the endogenous variables (for example, according to specific growth rates of money supply).

Expenditure equation modeling

Let's analyze the following expenditure equation form:

$$Y = \alpha_1 I_{t/1}^{ChGuver} + \alpha_2 I_{t/1}^{M} + b \quad (1)$$

The "Revised St. Louis Model" equations:

Shaping the Total Spending Equation:

The equation is: $I^{PIB} = \alpha_1 I_{t/1}^{ChGuver} + \alpha_2 I_{t/1}^{M} + b$

Equation (1) shows the nominal GDP evolution in the reference period (ΔYt) depending on the evolution of the monetary supply as a function of current (ΔMt) and past changes (ΔMt-1,...,ΔMt-n) (ΔMt), but also the change in total spending (ΔFt) as a function of current and past changes (ΔFt-1,...,ΔFt-n). The change in the nominal GDP from the reference period (ΔYt) is defined through the identity as being the sum of the total change in the real GDP calculated in constant prices (ΔXt) and the price changes (ΔPt).

For the spending equations the following indicators were used:

- Real GDP index
- Real monetary supply index
- The government spending index

By selecting the indicators from the GDP equation and using the LINEST function from EXCEL the following parameters were estimated (indicators in the Annex 1). After estimating the parameters the following equation arose:

$$Y = 71{,}82 + 0{,}099 I_{t/1}^{ChGuver} + 0{,}209 I_{t/1}^{M}$$

Interpretation:

b – represents the parameter that expresses the unregistered factors considered to have constant action, besides the ones considered as factorial characteristics. So the influence of the unregistered factors over GDP between 1998 - 2009 is 71,82

α_1 - the parameter for government spending index

α_2 - the parameter coresponding to the money supply

Therefore, we interpret the estimated parameters as follows: a 1% increase in government spending, national income has increased in the range examined, on average, by 0.099%, respectively at a 1% increase in average money supply, national income has increased over period, in average by 0.209%.

Thus, we can interpret the estimated parameters by: at a 1 % increase of government spending the GDP has increased with an average of 0,099%; The linear model used is valid for the test F because the calculated level (Fcal = 206,52) is superior to the one in the table (Ftab = 4.737) and the coefficient of correlation $r_{y/x}$ = 0.981 shows that the link between the analyzed variables is direct and intense.

The macroeconomic forecast

In the case of the GDP equation from the obtained model a forecast for the following year is drawn using the three scenarios: optimistic, realistic and pessimistic.

For the optimistic scenario we will consider the following hypothesis: the government spending will increase in real terms by 3% and the realistic monetary supply will increase in real terms by 10%. The spot value determined by regression model can be written as follow:

$$Y = 71{,}82 + 0{,}099 \times 1{,}03 + 0{,}209 \times 1{,}1 = 72{,}1518$$

For the realistic scenario we will consider the following hypothesis: the government spending will increase in real terms by 3.5% and the average monetary supply will increase in real terms by 8%.

$$Y = 71{,}82 + 0{,}099 \times 1{,}035 + 0{,}209 \times 1{,}08 = 72{,}1481$$

For the pessimistic scenario we consider the following hypothesis: the government spending will increase in real terms by 2,5% and the average monetary supply will increase in real terms by 3%.

$$Y = 71{,}82 + 0{,}099 \times 1{,}025 + 0{,}209 \times 1{,}03 = 72{,}1367$$

Shaping the price evolution function

The following equation shapes the price evolution function:

$$P = \alpha_1 D^{PIB} + \alpha_2 I_{t/1}^{Consum} + b \qquad (2)$$

The above formula specifies the quarterly change in the price level (ΔPt)) as a function of current and past demand pressures (Dt-

1,...,Dt-n), and anticipated price changes (ΔPt^{A}). The demand pressure is defined in equation (3) as the change in total spending minus the potential increase in output (ΔYt), on one hand and the difference between the potential production of the total employment in the reference period (Xt F) and the actual production made in the past period (Xt-1), on the other hand. So, the increase in demand is bigger as the mentioned difference is smaller, and the increase in GDP in the current period is bigger. The reverse is also valid. This price equation is essentially a short-run Phillips curve extended to include changes in total spending and anticipated prices. [1]

We used the following real dynamic indicators for 1999-2009 compared to 1998 in order to illustrate the price evolution function

CPI (consumer price index)

The real index of final consumption

The GDP Deflator

By selecting the indicators for the price level equation and using the LINEST EXCEL the following parameters were estimated (for the detailed calculation see Annex 2). Following the parameters estimation the following equation arose:

$$P = 109{,}97 + 1{,}0351 D^{PIB} - 2{,}1860 I_{t/1}^{Consum} \quad (2)$$

Interpretation:

b – is the parameter for unregistered factors, having constant influence, *than those considered as factorial features*. So the influence of the unregistered factors over GDP between 1998 and 2007 is of 109.97.

α_1 – the parameer coresponding to the GDP Deflator

α_2 - the parameer coresponding to the real index of the final consumption

[1] *Andersen, L. and K. Carlson,'' An Econometric Analysis of the Relation of Monetary Variables to the Behavior of Prices and Unemployment '', in O.Eckstein, ed., The Econometrics of Price Determination, Conference sponsored by Board of Governors of the Federal Reserve System and Social Science Research Council, Washington, D.C.(October 30-31, 1970), 166-183*

Therefore, we can interpret the estimated parameters as follows:

an increase of 1% in GDP deflator will generate an average price increase by 0.554%;

an increase of 1% in final consumption will generate a price level increase on average by 3.84%.

Linear model used is valid under test since the calculated F test (F = 103.7534) is higher than the table value (5143). How ($r^2 = 0.9628$) it follows that there is a strong and direct relationship between variables.

The macroeconomic forecast:

A forecast for the next year and using the three scenarios model (optimistic, realistic and pesimistic) is developed in order to describe the evolution of prices level

For the ***optimistic scenario*** we consider the following assumptions: GDP deflator will fall by 3% and final consumption will increase by 4% in real terms. Off value determined by the regression model according to the relation:

$$P = -8{,}16564 + 0{,}554046 \times 0{,}97 + 3{,}84859 \times 1{,}04 = -3{,}62568$$

For the ***realistic scenario*** we consider the following assumptions: GDP deflator will preserve its value and the final consumption will increase by 2% in real terms. Off value determined by the regression model according to the relation:

$$P = -8{,}16564 + 0{,}554046 \times 1 + 3{,}84859 \times 1{,}02 = -3{,}686003$$

For the ***pessimistic scenario*** we consider the following assumptions: GDP deflator will increase by 5% and the final consumption will fall by 10% in real terms. Off value determined by the regression model according to the relation:

$$P = -8{,}16564 + 0{,}554046 \times 1{,}05 + 3{,}84859 \times 0{,}90 = -4{,}1206$$

Modeling interest rate equation

The following eqution describe the interest rate model:

$$R = \alpha_1 IPC + \alpha_2 D^{PIB} + \alpha_3 I^{PIB} + \alpha_4 I^{M} + b \qquad (3)$$

Equation (3) defines the evolution of interest rate, which depends on: the evolution of money in the current period (ΔM_t), changes in real national income in such period (ΔX_t) and prior periods (ΔX_t,...ΔX_{t-n}),

the price developments in the current period (ΔP_t) and early evolution of prices ($\Delta P_{t\ A}$).

For the interest rate equation the following real dynamic indicators were used for the period 1999 – 2007 compared to 1998:

- The CPI index (consumption price index)
- The Deflator's dynamic
- The real dynamic of the average monetary supply
- The real dynamic of the GDP
- The long term interest rate

By selecting the indicators from the interest rate equation and using the LINEST function from Excel the following parameters were estimated (for the detailed calculation see Annex 3). The following equation describes the model:

$$R = 18{,}33312 + 0{,}0365IPC - 0{,}09751D^{PIB} + 0{,}370799I^{PIB} - 0{,}09061I^{M}$$

Interpretation:

b – represents the parameter that expresses the unregistered factors considered to have a constant action, besides the ones considered as factorial characteristics. So the influence of the unregistered factors over the evolution of prices between 1998 - 2007 is of 10.212

α_1 - the parameter coresponding to the price index – ICP

α_2 - the parameter coresponding to the GDP deflator

α_3 - the parameter coresponding to the real GDP

α_4 - the parameter coresponding to the monetary supply

We can conclude that for 1 % increase of CPI, the interest rate level interval has decreased with an average of 0.14426% in the analyzed, respectively for 1% increase of the D^{GBD}, the interest rate has increased in the analyzed interval in average with 0.1068%, respectively at a 1% increase of the I^{GBD}, the interest rate has decreased in the analyzed interval in average with 0.5808%, respectively at a 1% increase of the monetary supply the interest rate has decreased in the analyzed interval in average with 0.0159%.

The linear model used is valid for the F test because the calculated level (F_{cal} = 18.7615) is superior to the one in the table (F_{tab} = 5.192) and the coefficient of correlation ($r_{y/x}$ = 0.937536) shows that the link between the analyzed variables is direct and very powerful.

The macroeconomic forecast

In case of the interest rate equation from the obtained model a forecast for the following year is drawn using the three scenarios: optimistic, realistic and pessimistic.

For the optimistic scenario we consider the following hypothesis: the CPI will increase by 4% and the GDP deflator will increase by 3%, the GDP will increase in real terms by 8% and the average monetary supply will increase in real terms by 3%.

$$R = 18{,}33312 + 0{,}0365 \times 1{,}02 - 0{,}09751 \times 1{,}01 + 0{,}370799 \times 1{,}06 -$$
$$- 0{,}09061 \times 1{,}06 = 18{,}5676013$$

For the realistic scenario we consider the following hypothesis: the CPI[1] will increase by 6% and the GDP deflator will increase by 5%, the GDP will increase in real terms by 5% and the average monetary supply will increase in real terms by 2%.

$$R = 18{,}33312 + 0{,}0365 \times 1{,}05 - 0{,}09751 \times 1{,}03 + 0{,}370799 \times 1{,}03 -$$
$$- 0{,}09061 \times 1{,}02 = 18{,}5574345$$

For the pessimistic scenario we consider the following hypothesis: the CPI will increase by 9% and the GDP deflator will increase by 2%, the GDP will increase in real terms by 2% and the average monetary supply will increase in real terms by 1%. Replacing the above information in the equation for each scenario was made a forecast for the 2008 – 2011 period obtaining the estimated values (for the detailed calculation see Annex 3).

[1] *CONSUMER PRICE INDICES*

$$R = 18{,}33312 + 0{,}0365 \times 1{,}08 - 0{,}09751 \times 1{,}07 + 0{,}370799 \times 0{,}98 -$$
$$- 0{,}09061 \times 1{,}01 = 18{,}536997$$

From the above, it results that model „Revised St. Louis Model" is a relatively simple model that includes a small number of variables and equations, which, although including the time variable expresses the functional relationship between variables in linear form.

The simplicity of the model results from operating with very synthetic economic aggregates (GDP, general prices level) and one monetary aggregate (money supply), all seen from macroeconomic perspective, with no differences between economic sectors or type of market.

Another important simplification is the absence of relations with foreign currency and balance of payments effects. An important feature of the model is that its equations are not "simultaneous", but "success", which means that their solution is the assumption that exogenous and endogenous variables in previous periods are known quantities.

This model is used in order to define economic policy, and especially monetary policy, ie to determine the optimum development of exogenous variables, especially money, which best fits the objectives of economic policy of the state.

APPENDICES

Annex 1. The indicators for determining the consumption equations' parameters

Year	The real index compared to 1998%		
	GDP	Monetary supply	Governmental expenses
1998	100	100	100
1999	98,8	103,9	80,2
2000	101	100	102,8
2001	106,8	106,2	102,2
2002	112,2	122	111,2
2003	118,1	138,8	186,5
2004	128,1	163,1	159,4
2005	133,4	214,3	193,9
2006	142,5	255,3	187,9
2007	151,6	296,3	181,9
2008	160,7	337,3	175,9
2009	169,8	378,3	169,9

By selecting the indicators from income function and using LINEST Excel function we estimated the parameters from the folowing table:

0,099574	0,209403	71,82078
0,037425	0,01914	3,687632
0,981	3,360664	#N/A
206,5263	8	#N/A
4665,044	90,35253	#N/A

The above figures present the following data:

Crt. No.	Description	Value
	α_1 - the parameter for government spending index	0,099574
	α_2 - the parameter coresponding to the money supply	0,209403
	b- the parameter that expresses the unregistered factors considered to have constant action	71,82078
	r^2 - coefficient of determination	0,981
	se_1 -The standard error values for the coefficient α_1	0,037425
	se_2 The standard error values for the coefficient α_2	0,01914
	se_B - The standard error values for the coefficient b	3,687632
	The F statistic or the F-observed value	206,5263
	se_y - The standard error for estimated y	3,360664
	Df - The degrees of freedom	8
	ssreg- The regression sum of squares $\sum (y_i - Y)^2$	4665,044
	ssresid - The residual sum of squares $\sum (y_i - \bar{y})^2$	90,35253

Annex 2. Calculations for prices dynamics estimation

Year	The real index compared to 1998%		
	ICP index	Final consumption	GDP Deflator
1998	100	100	100
1999	145,8	98,4	147,7
2000	212,4	96,6	212,9
2001	285,7	103,2	292,5
2002	350	107,8	361,2
2003	403,6	124,3	447,5
2004	451,6	137,9	514,7
2005	492,2	151,9	577,9
2006	646,8	166,5	646,8
2007	801,4	181,1	715,7
2008	956	195,7	784,6
2009	1110,6	210,3	853,5

By selecting the indicators from prices function and using LINEST Excel function we estimated the parameters from the folowing table:

0,554046	3,848594	-8,16564
0,290097	1,877238	133,6215
0,962878	58,18822	#N/A
103,7534	8	#N/A
702590,7	27086,95	#N/A

The above figures present the following data:

Crt. No.	Description	Value
1.	α_1 -the parameter coresponding to the GDP Deflator	0,554046
2.	α_2 - the parameter coresponding to the real index of the final consumption	3,848594
3.	b- the parameter that expresses the unregistered factors considered to have constant action	-8,16564
4.	r^2 - The coefficient of determination. Compares estimated and actual y-values, and ranges in value from 0 to 1. If it is 1, there is a perfect correlation in the sample — there is no difference between the estimated y-value and the actual y-value. At the other extreme, if the coefficient of determination is 0, the regression equation is not helpful in predicting a y-value.	0,962878
5.	se_1 - The standard error values for the coefficients α_1	0,290097
6.	se_2 - The standard error values for the coefficients α_2	1,877238
7.	se_B - The standard error value for the constant b	133,6215
8.	F - The F statistic or the F-observed value. Use the F statistic to determine whether the observed relationship between the dependent and independent variables occurs by chance.	103,7534
9.	se_y - The standard error for the Y estimate	58,18822
10.	df- The degrees of freedom. Use the degrees of freedom to help you find F-critical values in a statistical table. Compare the values you find in the table to the F statistic returned by LINEST to determine a confidence level for the model.	8
11.	ssreg- The regression sum of squares. $\sum (y_i - Y)^2$	702590,7
12.	ssresid- The residual sum of squares. $\sum (y_i - \bar{y})^2$	27086,95

Anexa 3. Calculations on the estimated interest rate equation parameters

Index of the equations of interest rate

Year	The real index compared to 1998%				
	The interest rate	Monetary supply	GDP	GDP Deflator	ICP
1998	38,00	100	100	100	100
1999	38,00	103,9	98,8	147,7	145,8
2000	35,00	100	101	212,9	212,4
2001	35,00	106,2	106,8	292,5	285,7
2002	20,40	122	112,2	361,2	350
2003	18,87	138,8	118,1	447,5	403,6
2004	20,16	163,1	128,1	514,7	451,6
2005	9,68	214,3	133,4	577,9	492,2
2006	8,45	255,3	142,5	646,8	646,8
2007	7,22	296,3	151,6	715,7	801,4
2008	5,99	337,3	160,7	784,6	956
2009	4,76	378,3	169,8	853,5	1110,6

By selecting the indicators from interest rate function and using LINEST Excel function we estimated the parameters from the folowing table:

0,036543	-0,09751	0,370799	-0,09061	18,33312
0,027013	0,040724	0,748216	0,113258	59,72229
0,952446	3,641836	#N/A	#N/A	#N/A
30,04289	6	#N/A	#N/A	#N/A
1593,831	79,57781	#N/A	#N/A	#N/A

The format of the interest rate equation is: $R = \alpha_1 IPC + \alpha_2 D^{PIB} + \alpha_3 I^{PIB} + \alpha_4 I^{M} + b$

The above data pressent the following informations:

Nr.crt	Semnificație	Value
1.	α_1 - the parameter coresponding to the price index - ICP	0,036543
2.	α_2 - the parameter coresponding to the GDP deflator	-0,09751
3.	α_3 - the parameter coresponding to the real GDP	0,370799
4.	α_4 - the parameer coresponding to the monetary supply	-0,09061
5.	b- the parameter that expresses the unregistered factors considered to have constant action	18,33312
6.	r^2 - The coefficient of determination.	0,952446
7.	se_1 - The standard error values for the coefficients α_1	0,027013
8.	se_2 - The standard error values for the coefficients α_2	0,040724
9.	se_3 - The standard error values for the coefficients α_3	0,748216
10.	se_4 - The standard error values for the coefficients α_4	0,113258
11.	se_B - eroarea standard pentru constanta b	59,72229
12.	F - The F statistic or the F-observed value	30,04289
13.	se_y - The standard error for the Y estimate	3,641836
14.	df- The degrees of freedom	6
15.	ssreg- The regression sum of squares. $\sum (y_i - Y)^2$	1593,831
16.	ssresid- The residual sum of squares $\sum (y_i - \bar{y})^2$	79,57781

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